



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: C12N 15/12, 5/10, 1/21, C07K 14/47, 16/18, C12Q 1/68, G01N 33/50, 33/53, 33/68, A61K 38/17	A2	(11) International Publication Number: WO 98/39446 (43) International Publication Date: 11 September 1998 (11.09.98)																														
(21) International Application Number: PCT/US98/04482 (22) International Filing Date: 6 March 1998 (06.03.98)																																
(30) Priority Data: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">60/040,162</td> <td style="width: 40%;">7 March 1997 (07.03.97)</td> <td style="width: 20%; text-align: center;">US</td> </tr> <tr> <td>60/040,333</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/038,621</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/040,161</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/040,626</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/040,334</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/040,336</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/040,163</td> <td>7 March 1997 (07.03.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/043,580</td> <td>11 April 1997 (11.04.97)</td> <td style="text-align: center;">US</td> </tr> <tr> <td>60/043,568</td> <td>11 April 1997 (11.04.97)</td> <td style="text-align: center;">US</td> </tr> </table> <p><i>(Continued on the following page)</i></p>			60/040,162	7 March 1997 (07.03.97)	US	60/040,333	7 March 1997 (07.03.97)	US	60/038,621	7 March 1997 (07.03.97)	US	60/040,161	7 March 1997 (07.03.97)	US	60/040,626	7 March 1997 (07.03.97)	US	60/040,334	7 March 1997 (07.03.97)	US	60/040,336	7 March 1997 (07.03.97)	US	60/040,163	7 March 1997 (07.03.97)	US	60/043,580	11 April 1997 (11.04.97)	US	60/043,568	11 April 1997 (11.04.97)	US
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(71) Applicant (for all designated States except US): HUMAN GENOME SCIENCES, INC. [US/US]; 9410 Key West Avenue, Rockville, MD 20850 (US).																																
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(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).																																
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Published <i>Without international search report and to be republished upon receipt of that report.</i> <i>With an indication in relation to a deposited microorganism furnished under Rule 13bis separately from the description.</i> <i>Date of receipt by the International Bureau:</i> 06 April 1998 (06.04.1998)																																
(54) Title: 70 HUMAN SECRETED PROTEINS																																
(57) Abstract <p>The present invention relates to 70 novel human secreted proteins and isolated nucleic acids containing the coding regions of the genes encoding such proteins. Also provided are vectors, host cells, antibodies, and recombinant methods for producing human secreted proteins. The invention further relates to diagnostic and therapeutic methods useful for diagnosing and treating disorders related to these novel human secreted proteins.</p>																																

60/043,314	11 April 1997 (11.04.97)	US	60/047,598	23 May 1997 (23.05.97)	US	60/056,882	22 August 1997 (22.08.97)	US
60/043,569	11 April 1997 (11.04.97)	US	60/047,613	23 May 1997 (23.05.97)	US	60/056,637	22 August 1997 (22.08.97)	US
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EE	Estonia						

Applicant's or agent's file reference number	P001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>76</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97902</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (If the indications are not for all designated States)	
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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	P5001PCT	International applicatic	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>82</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit April 4, 1997	Accession Number 97976
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
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UNITED KINGDOM

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DENMARK

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The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS00:PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>65</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97897</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (If the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97899</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file
reference number

PS001PCT

International application No. Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>73</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 29, 1997</u>	Accession Number <u>209084</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>80</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT	
Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97904</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
in respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97898</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application no.	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>77</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97903</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer </p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

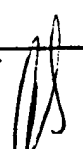
The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application no. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT	
Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97901</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable)	
This information is continued on an additional sheet <input type="checkbox"/>	
in respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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<input checked="" type="checkbox"/> This sheet was received with the international application	
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For International Bureau use only	
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Authorized officer	

Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>65</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 29, 1997</u>	Accession Number <u>209085</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>in respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

<p style="text-align: center;">For receiving Office use only</p> <div style="border: 1px solid black; padding: 5px;"> <input checked="" type="checkbox"/> This sheet was received with the international application </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Authorized officer </div>	<p style="text-align: center;">For International Bureau use only</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> This sheet was received by the International Bureau on: </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Authorized officer </div>
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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>65</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>April 28, 1997</u>	Accession Number <u>209010</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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Page 2

UNITED KINGDOM

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DENMARK

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SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application no. unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>73</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit September 4, 1997	Accession Number 209236
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>in respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
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UNITED KINGDOM

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DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>80</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209050</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application	5. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>77</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209049</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit") <div style="height: 100px;"></div>	

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UNITED KINGDOM

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DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>76</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209048</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>n respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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Page 2**UNITED KINGDOM**

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SWEDEN

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FINLAND

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Applicant's or agent's file
reference number

PS001PCT

International application No. Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209047</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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AUSTRALIA

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FINLAND

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Applicant's or agent's file reference number	PS001PCT	International application No. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209046</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
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Page 2**UNITED KINGDOM**

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DENMARK

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NETHERLANDS

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NORWAY

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AUSTRALIA

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Applicant's or agent's file reference number	PS001PCT	International application	o. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>65</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209045
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
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Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

Applicant's or agent's file reference number	PS001PCT	International application no. Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209044</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

<p style="text-align: center;">For receiving Office use only</p> <div style="border: 1px solid black; padding: 5px;"> <input checked="" type="checkbox"/> This sheet was received with the international application </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Authorized officer </div>	<p style="text-align: center;">For International Bureau use only</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> This sheet was received by the International Bureau on: </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Authorized officer </div>
---	--

Page 2**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

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SWEDEN

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NETHERLANDS

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CANADA

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NORWAY

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Applicant's or agent's file reference number	PS001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>65</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209043</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

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UNITED KINGDOM

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Applicant's or agent's file reference number	PS001PCT	International applicat	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input checked="" type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution <i>(including postal code and country)</i> <u>12301 Parklawn Drive</u> <u>Rockville, Maryland 20852</u> <u>United States of America</u>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97900</u>
C. ADDITIONAL INDICATIONS <i>(leave blank if not applicable)</i> This information is continued on an additional sheet <input type="checkbox"/>	
<p>In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).</p>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE <i>(if the indications are not for all designated States)</i>	
E. SEPARATE FURNISHING OF INDICATIONS <i>(leave blank if not applicable)</i>	
The indications listed below will be submitted to the International Bureau later <i>(specify the general nature of the indications, e.g., "Accession Number of Deposit")</i>	

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20. A method for identifying a binding partner to the polypeptide of claim 11 comprising:

- 5 (a) contacting the polypeptide of claim 11 with a binding partner; and
(b) determining whether the binding partner effects an activity of the polypeptide.

21. The gene corresponding to the cDNA sequence of SEQ ID NO:Y.

10 22. A method of identifying an activity in a biological assay, wherein the method comprises:

- (a) expressing SEQ ID NO:X in a cell;
(b) isolating the supernatant;
(c) detecting an activity in a biological assay; and
15 (d) identifying the protein in the supernatant having the activity.

23. The product produced by the method of claim 22.

- (g) a variant of SEQ ID NO:Y;
- (h) an allelic variant of SEQ ID NO:Y; or
- (i) a species homologue of the SEQ ID NO:Y.

5 12. The isolated polypeptide of claim 11, wherein the secreted form or the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

10 13. An isolated antibody that binds specifically to the isolated polypeptide of claim 11.

 14. A recombinant host cell that expresses the isolated polypeptide of claim 11.

15 15. A method of making an isolated polypeptide comprising:
 (a) culturing the recombinant host cell of claim 14 under conditions such that said polypeptide is expressed; and
 (b) recovering said polypeptide.

20 16. The polypeptide produced by claim 15.

 17. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 11 or the polynucleotide of claim 1.

25 18. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
 (a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and
 (b) diagnosing a pathological condition or a susceptibility to a pathological
30 condition based on the presence or absence of said mutation.

 19. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
 (a) determining the presence or amount of expression of the polypeptide of
35 claim 11 in a biological sample; and
 (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

4. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises the entire nucleotide sequence of SEQ ID NO:X or the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X.

5

5. The isolated nucleic acid molecule of claim 2, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

10

6. The isolated nucleic acid molecule of claim 3, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

15

7. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

8. A method of making a recombinant host cell comprising the isolated nucleic acid molecule of claim 1.

20

9. A recombinant host cell produced by the method of claim 8.

10. The recombinant host cell of claim 9 comprising vector sequences.

25

11. An isolated polypeptide comprising an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(b) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z, having biological activity;

30

(c) a polypeptide domain of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(d) a polypeptide epitope of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

35

(e) a secreted form of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(f) a full length protein of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

What Is Claimed Is:


1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group
5 consisting of:
 - (a) a polynucleotide fragment of SEQ ID NO:X or a polynucleotide fragment of the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;
 - (b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:Y or a
10 polypeptide fragment encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;
 - (c) a polynucleotide encoding a polypeptide domain of SEQ ID NO:Y or a polypeptide domain encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;
 - 15 (d) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:Y or a polypeptide epitope encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;
 - (e) a polynucleotide encoding a polypeptide of SEQ ID NO:Y or the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X,
20 having biological activity;
 - (f) a polynucleotide which is a variant of SEQ ID NO:X;
 - (g) a polynucleotide which is an allelic variant of SEQ ID NO:X;
 - (h) a polynucleotide which encodes a species homologue of the SEQ ID NO:Y;
 - (i) a polynucleotide capable of hybridizing under stringent conditions to any
25 one of the polynucleotides specified in (a)-(h), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.
2. The isolated nucleic acid molecule of claim 1, wherein the
30 polynucleotide fragment comprises a nucleotide sequence encoding a secreted protein.
3. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding the sequence identified as SEQ ID NO:Y or the polypeptide encoded by the cDNA sequence included
35 in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X.

380

Applicant's or agent's file reference number	3001PCT	International application	Unassigned 98/04482
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)


A. The indications made below relate to the microorganism referred to in the description on page 64, line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209047
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable) The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
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Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>82</u> . line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit April 4, 1997	Accession Number 97976
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
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378

Applicant's or agent's file reference number	S001PCT	International application	Unassigned 39482
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 80, line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United-States of America	
Date of deposit May 15, 1997	Accession Number 209050
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
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377

Applicant's or agent's file reference number	S001PCT	International application	Unassigned 04482
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)


A. The indications made below relate to the microorganism referred to in the description on page 80, line N/A	
B. IDENTIFICATION OF DEPOSIT	
Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97904
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
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Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM


(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>77</u> line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209049
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
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Applicant's or agent's file reference number	S001PCT	375	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

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B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97903
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


374

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>76</u> . line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution <p style="text-align: center;">American Type Culture Collection</p>	
Address of depositary institution (including postal code and country) <p>12301 Parklawn Drive Rockville, Maryland 20852 United States of America</p>	
Date of deposit <u>February 26, 1997</u>	Accession Number <u>97902</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

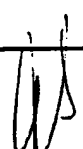
For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

373

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 76 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209048
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


372

Applicant's or agent's file reference number	S001PCT	International applicant	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 73 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 29, 1997	Accession Number 209084
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


371

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>73</u> . line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit <u>September 4, 1997</u>	Accession Number <u>209236</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

For receiving Office use only <input checked="" type="checkbox"/> This sheet was received with the international application Authorized officer 	For International Bureau use only <input type="checkbox"/> This sheet was received by the International Bureau on: Authorized officer
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370

Applicant's or agent's file reference number	PS001PCT	International applicatio	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 65, line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209043
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	


For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

369

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 65 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97897
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


368

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 65, line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 29, 1997	Accession Number 209085
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	


For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

Applicant's or agent's file reference number	S001PCT	367	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 65, line N/A	
B. IDENTIFICATION OF DEPOSIT	
Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit April 28, 1997	Accession Number 209010
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


366

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>64</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution <p style="text-align: center;">American Type Culture Collection</p>	
Address of depositary institution (including postal code and country) <p>12301 Parklawn Drive Rockville, Maryland 20852 United States of America</p>	
Date of deposit <u>May 15, 1997</u>	Accession Number <u>209046</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications. e.g., "Accession Number of Deposit")	

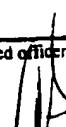
<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer </p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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Applicant's or agent's file reference number	PS001PCT	365	International application	Unassigned	CHAGE
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 64 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97900
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


364

Applicant's or agent's file reference number	PS001PCT	International applicatio	Unassigned 04482
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 65 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209045
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	


For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

363

Applicant's or agent's file reference number	P001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 64 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97899
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


362

Applicant's or agent's file reference number	S001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 64, line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit May 15, 1997	Accession Number 209044
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	


For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

361

Applicant's or agent's file reference number	PS001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 64 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97898
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	
For receiving Office use only	For International Bureau use only
<input checked="" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer


360

Applicant's or agent's file reference number	PS001PCT	International application	Unassigned
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page 64 . line N/A	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 12301 Parklawn Drive Rockville, Maryland 20852 United States of America	
Date of deposit February 26, 1997	Accession Number 97901
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications, e.g., "Accession Number of Deposit")	

For receiving Office use only	For International Bureau use only
<input checked="checked" type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on:
Authorized officer 	Authorized officer

Ser Ile Leu Gly Ile Ile Ser Val Pro Leu Ser Ile Gly Tyr Cys Ala
 1 5 10 15

5 Ser Lys His Ala Leu Arg Gly Phe Phe Asn Gly Leu Arg
 20 25

10 (2) INFORMATION FOR SEQ ID NO: 270:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 8 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 270:

Met Ala Tyr His Gly Leu Thr Val
 1 5

20

(2) INFORMATION FOR SEQ ID NO: 271:

25 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 6 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 271:

30 Ile Ser Ala Ala Arg Val
 1 5

35 (2) INFORMATION FOR SEQ ID NO: 272:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 11 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 272:

Pro Asp Val Ser Glu Phe Met Thr Arg Leu Phe
 1 5 10

45

(2) INFORMATION FOR SEQ ID NO: 273:

50 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 273:

55

Phe Asp Pro Val Arg Val Asp Ile Thr Ser Lys Gly Lys Met Arg Ala
 1 5 10 15

Arg

358

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 266:

5 Pro Ser Ala Lys Tyr Phe Phe Lys Met Ala Phe Tyr Asn Gly Trp Ile
 1 5 10 15

 Leu Phe Leu Ala Val Leu Ala Ile Pro Val Cys Ala Val Arg Gly Arg
 20 25 30

10 Asn Val Glu Asn Met Lys Ile Leu Arg Leu Met Leu Leu His Ile Lys
 35 40 45

 Tyr Leu Tyr Gly Ile Arg Val Glu Val Arg Gly Ala His His Phe Pro
 50 55 60

15 Pro Ser Gln Pro Tyr Val Val Val Ser Asn His Gln Ser Ser Leu Asp
 65 70 75 80

20 Leu Leu Gly Met Met Glu Val Leu Pro Gly Arg Cys Val Pro Ile Ala
 85 90 95

 Lys Arg

25

(2) INFORMATION FOR SEQ ID NO: 267:

(i) SEQUENCE CHARACTERISTICS:

30 (A) LENGTH: 9 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 267:

35 Thr Val Phe Arg Glu Ile Ser Thr Asp
 1 5

40 (2) INFORMATION FOR SEQ ID NO: 268:

(i) SEQUENCE CHARACTERISTICS:

45 (A) LENGTH: 11 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 268:

50 Leu Trp Ala Gly Ser Ala Gly Trp Pro Ala Gly
 1 5 10

(2) INFORMATION FOR SEQ ID NO: 269:

55 (i) SEQUENCE CHARACTERISTICS:

 (A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 269:

60

357

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 263:

5 Cys Lys Cys Leu Thr Gly Phe Thr Gly Gln Lys Cys
 1 5 10

(2) INFORMATION FOR SEQ ID NO: 264:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 264:

Cys Gln Cys Leu Gln Gly Phe Thr Gly Gln Tyr Cys
 1 5 10

20

(2) INFORMATION FOR SEQ ID NO: 265:

(i) SEQUENCE CHARACTERISTICS:

25

(A) LENGTH: 127 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 265:

30 Gly Leu Ala Cys Trp Leu Ala Gly Val Ile Phe Ile Asp Arg Lys Arg
 1 5 10 15

Thr Gly Asp Ala Ile Ser Val Met Ser Glu Val Ala Gln Thr Leu Leu
 20 25 30

35

Thr Gln Asp Val Xaa Val Trp Val Phe Pro Glu Gly Thr Arg Asn His
 35 40 45

40 Asn Gly Ser Met Leu Pro Phe Lys Arg Gly Ala Phe His Leu Ala Val
 50 55 60

Gln Ala Gln Val Pro Ile Val Pro Ile Val Met Ser Ser Tyr Gln Asp
 65 70 75 80

45 Phe Tyr Cys Lys Lys Glu Arg Arg Phe Thr Ser Gly Gln Cys Gln Val
 85 90 95

Arg Val Leu Pro Pro Val Pro Thr Glu Gly Leu Thr Pro Asp Asp Val
 100 105 110

50

Pro Ala Leu Ala Asp Arg Val Arg His Ser Met Leu His Cys Phe
 115 120 125

55

(2) INFORMATION FOR SEQ ID NO: 266:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 98 amino acids

60

(B) TYPE: amino acid

356

305 310 315 320

Ala Glu Pro Pro Leu Glu Trp Pro Phe Pro Asp Leu Ser Ser Glu Pro
 325 330 335

5 Leu Cys Arg Gly Pro Ile Leu Pro Leu Gln Ala Asn Leu Thr Arg Lys
 340 345 350

10 Gly Gly Trp Leu Pro Thr Gly Ser Pro Ser Val Ile Leu Gln Asp Arg
 355 360 365

Tyr Ser Gly
 370

15

(2) INFORMATION FOR SEQ ID NO: 260:

20 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 12 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 260:

25 Cys Arg Cys Ala Ser Gly Phe Thr Gly Glu Asp Cys
 1 5 10

30 (2) INFORMATION FOR SEQ ID NO: 261:

 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 12 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 261:

35 Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys
 1 5 10

40

(2) INFORMATION FOR SEQ ID NO: 262:

45 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 12 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 262:

50 Cys Leu Asn Leu Pro Gly Ser Tyr Gln Cys Gln Cys
 1 5 10

55

(2) INFORMATION FOR SEQ ID NO: 263:

 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 12 amino acids
 (B) TYPE: amino acid

60

355

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 259:

Met	Glu	Leu	Glu	Leu	Asp	Ala	Gly	Asp	Gln	Asp	Leu	Leu	Ala	Phe	Leu	1	5	10	15
Leu	Glu	Glu	Ser	Gly	Asp	Leu	Gly	Thr	Ala	Pro	Asp	Glu	Ala	Val	Arg	20	25	30	
Ala	Pro	Leu	Asp	Trp	Ala	Leu	Pro	Leu	Ser	Glu	Val	Pro	Ser	Asp	Trp	35	40	45	
Glu	Val	Asp	Asp	Leu	Leu	Cys	Ser	Leu	Leu	Ser	Pro	Pro	Ala	Ser	Leu	50	55	60	
Asn	Ile	Leu	Ser	Ser	Ser	Asn	Pro	Cys	Leu	Val	His	His	Asp	His	Thr	65	70	75	80
Tyr	Ser	Leu	Pro	Arg	Glu	Thr	Val	Ser	Met	Asp	Leu	Glu	Ser	Glu	Ser	85	90	95	
Cys	Arg	Lys	Glu	Gly	Thr	Gln	Met	Thr	Pro	Gln	His	Met	Glu	Glu	Leu	100	105	110	
Ala	Glu	Gln	Glu	Ile	Ala	Arg	Leu	Val	Leu	Thr	Asp	Glu	Glu	Lys	Ser	115	120	125	
Leu	Leu	Glu	Lys	Glu	Gly	Leu	Ile	Leu	Pro	Glu	Thr	Leu	Pro	Leu	Thr	130	135	140	
Lys	Thr	Glu	Glu	Gln	Ile	Leu	Lys	Arg	Val	Arg	Arg	Lys	Ile	Arg	Asn	145	150	155	160
Lys	Arg	Ser	Ala	Gln	Glu	Ser	Arg	Arg	Lys	Lys	Lys	Val	Tyr	Val	Gly	165	170	175	
Gly	Leu	Glu	Ser	Arg	Val	Leu	Lys	Tyr	Thr	Ala	Gln	Asn	Met	Glu	Leu	180	185	190	
Gln	Asn	Lys	Val	Gln	Leu	Leu	Glu	Glu	Gln	Asn	Leu	Ser	Leu	Leu	Asp	195	200	205	
Gln	Leu	Arg	Lys	Leu	Gln	Ala	Met	Val	Ile	Glu	Ile	Ser	Asn	Lys	Thr	210	215	220	
Ser	Ser	Ser	Ser	Thr	Cys	Ile	Leu	Val	Leu	Leu	Val	Ser	Phe	Cys	Leu	225	230	235	240
Leu	Leu	Val	Pro	Ala	Met	Tyr	Ser	Ser	Asp	Thr	Arg	Gly	Ser	Leu	Pro	245	250	255	
Ala	Glu	His	Gly	Val	Leu	Ser	Arg	Gln	Leu	Arg	Ala	Leu	Pro	Ser	Glu	260	265	270	
Asp	Pro	Tyr	Gln	Leu	Glu	Leu	Pro	Ala	Leu	Gln	Ser	Glu	Val	Pro	Lys	275	280	285	
Asp	Ser	Thr	His	Gln	Trp	Leu	Asp	Gly	Ser	Asp	Cys	Val	Leu	Gln	Ala	290	295	300	
Pro	Gly	Asn	Thr	Ser	Cys	Leu	Leu	His	Tyr	Met	Pro	Gln	Ala	Pro	Ser				

GAGAATCTCA CCCTGGGGAT ACGGGAAAGC AGGAAGGAGG ATGAGGGATG GTACCTTATG 420
 ACCCTGGAGA AAAATGTTTC AGTTCAGCGC TTTTGCCTGC AGTTGAGGCT TTATGAGCAG 480
 5 GTCTCCACTC CAGAAATTAA AGTTTAAAC AAGACCCAGG AGAACGGGAC CTGCACCTTG 540
 ATACTGGGCT GCACAGTGA GAAGGGGGAC CATGTGGCTT ACAGCTGGAG TGAAAAGGCG 600
 10 GGCACCCACC CACTGAACCC AGCCAACAGC TCCACCTCC TGTCCCTCAC CCTCGGCCCC 660
 CAGCATGCTG ACAATATCTA CATCTGCACC GTGAGCAACC CTATCAGCAA CAATTCCCAG 720
 ACCTTCAGCC CGTGGCCCGG ATGCAGGACA GACCCCTCAG AAACAAAACC ATGGGCAGTG 780
 15 TATGCTGGGC TGTTAGGGGG TGTATCATG ATTCTCATCA TGGTGGTAAT ACTACAGTTG 840
 AGAAGAAGAG GTAAAACGAA CCATTACCAG ACAACAGTGG AAAAAAAG CCTTACGATC 900
 20 TATGCCCAAG TCCAGAAACC AGGTGACACT CATCATCAGA CTTGGACTT ATTCTAATCC 960
 AGGATGACCT TATTTTGAAA TCCTTATCTT GACATCTGTG AAGACCTTTA TTCAAATAAA 1020
 GTCACATTTT GACATCTGTC GAGGGGCTGG AGCCGGGCCG GGGCGATGTG GAGCGCGGC 1080
 25 CGCGCGGGG CTGCTGGCC GGTGCTGTTG GGGCTGCTGC TGGCGCTGTT AGTGCCGGGC 1140
 GGTGGTGCCG CCAAGACCGG TCGGAGCTC GTGACTGCGG GTCGGTGCTG AAGCTGCTCA 1200
 30 ATACGCACCA CCGGTGCGGC TGCACTCGCA CGACATCAA TACGGATCCG GCAGCGGCCA 1260
 GCAATCGGTG ACCGGCGTAG AGGTGCGAGC GACGAATAGC TACTGGCGGA TCCGCGGCG 1320
 CTCGGAGGGG GGTGCCCGCG CGGTCCCCG GTGCGCTGCG GGCAGGCGGT GAGGTCACAC 1380
 35 ATGTGCTTAC GGGCAAGAAC CTGCACACGC ACCACTTCCC GTCGCGCTG TCCAACAACC 1440
 AGGAAGTGAG TGCCAAAGG GAAGACGCG AGGGCGACGA CCTGGACCTA TGGACAGTGC 1500
 40 GCTGCTCTGC TCTGGACAGC ACTGGGAGCG TGAGGCTGCT GTGGCGCCTT CCAGCATGTG 1560
 GCACCTCTGT GGTTCCTGTC AGTCACGGTA GCAGTATGGA AGCCCCATCC GTGGCAGCA 1620
 TGAGGTCCAC GCATGCCCAG TGCCAACACG CACAATACGT GGAAGGCCAT GGAAGGCATC 1680
 45 TTCATCAAGC CTAGTGTGGA GCCCTCTGCA GGTACGATG AACTCTGAGT GTGTGGATGG 1740
 ATGGGTGGAT GGAGGGTGGC AGGTGGGGCG TCTGCAGGGC CACTCTTGGC AGAGACTTTG 1800
 50 GGTGTGTAGG GTCCTCAAG TGCCTTGTG ATTAAAGAAT GTTGGTCTAT GA 1852

55 (2) INFORMATION FOR SEQ ID NO: 259:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 371 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

60

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 93 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 256:

Met Ile His Leu Gly His Ile Leu Phe Leu Leu Leu Leu Pro Val Ala
 1 5 10 15

10 Ala Ala Gln Thr Thr Pro Gly Glu Arg Ser Ser Leu Pro Ala Phe Tyr
 20 25 30

Pro Gly Thr Ser Gly Ser Cys Ser Gly Cys Gly Ser Leu Ser Leu Pro
 35 40 45

15 Leu Leu Ala Gly Leu Val Ala Ala Asp Ala Val Ala Ser Leu Leu Ile
 50 55 60

Val Gly Ala Val Phe Leu Cys Ala Arg Pro Arg Arg Ser Pro Ala Gln
 20 65 70 75 80

Asp Gly Lys Val Tyr Ile Asn Met Pro Gly Arg Gly Xaa
 85 90

25

(2) INFORMATION FOR SEQ ID NO: 257:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 257:

35 Pro Gly His Leu Leu Pro His Lys Trp Glu Asn Cys
 1 5 10

40 (2) INFORMATION FOR SEQ ID NO: 258:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1852 base pairs

(B) TYPE: nucleic acid

45 (C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 258:

50 TGGCATCTGT GAGCAGCTGC CAGGCTCCGG CCAGGATCCC TTCCTTCTCC TCATTGGCTG 60

ATGGATCCCA AGGGGCTCCT CTCCTTGACC TTCGTGCTGT TTCTCTCCCT GGCTTTTGGG 120

GCAAGCTACG GAACAGGTGG GGCATGATG AACTGCCCAA AGATTCTCCG GCAGTTGGGA 180

55 AGCAAAGTGC TGCTGCCCTT GACATATGAA AGGATAAATA AGAGCATGAA CAAAAGCATC 240

CACATTGTCTG TCACAATGGC AAAATCACTG GAGAACAGTG TCGAGAACAA AATAGTGTCT 300

60 CTTGATCCAT CCGAAGCAGG CCTCCACGT TATCTAGGAG ATCGCTACAA GTTTTATCTG 360

352

Pro Leu Thr Gly Trp Lys Ser Pro Ala Ser Leu Thr Met Ser Gly Met
 145 150 155 160

5 Ala Gly Leu Phe Ser Ile Ser Gly Lys Ile Trp His Leu His Asn Tyr
 165 170 175

Phe Thr Val Thr Leu Gly Ile Pro Ala Trp Cys Ser Tyr Val Phe Phe
 180 185 190

10 Val Ile Ala Thr Leu Val Phe Gly Leu Phe Met Gly Leu Val Leu Val
 195 200 205

Val Ile Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu
 210 215 220

15 Arg Ser Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln
 225 230 235 240

20 Leu Gln Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu Asn
 245 250 255

Lys Asp Ser Leu Val Asp Asp Glu Glu Glu Lys Glu Asp Leu Gly Asp
 260 265 270

25 Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu Asp Asn Leu Ala Ala Gly
 275 280 285

Val Asp Glu Glu Arg Ser Glu Ala Asn Asp Gln Gly Pro Pro Gly Glu
 290 295 300

30 Asp Gly Val Thr Arg Glu Xaa Ser Arg Ala Xaa
 305 310 315

35

(2) INFORMATION FOR SEQ ID NO: 255:

40 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 53 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 255:

45 Met Leu Lys Ala Leu Phe Arg Thr Leu Gln Ala Met Leu Leu Gly Val
 1 5 10 15

Trp Ile Leu Leu Leu Ala Ser Leu Ala Pro Leu Trp Leu Tyr Cys
 20 25 30

50 Trp Arg Met Phe Pro Thr Lys Gly Lys Arg Asp Gln Lys Glu Met Leu
 35 40 45

Glu Val Ser Gly Ile
 50

55

(2) INFORMATION FOR SEQ ID NO: 256:

60

351

85 90 95

Lys Glu Leu Gly Gly Arg Gly Arg Lys Trp Glu Pro Ser
100 105

5

(2) INFORMATION FOR SEQ ID NO: 253:

10 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 45 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 253:

15 Met Phe Tyr Phe Leu Pro Leu Ile Phe Pro Ala Phe Pro Pro Trp Ala
1 5 10 15

20 Phe Arg Leu Ser Thr Leu Phe Thr Ile Ile Ser Trp Ser Glu Asp Ser
20 25 30

Asn Asn Ser Gln Val Tyr Met Asn Cys Val Cys Ser Phe
35 40 45

25

(2) INFORMATION FOR SEQ ID NO: 254:

30 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 315 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 254:

35 Met Ala Gly Gly Arg Cys Gly Pro Xaa Leu Thr Ala Leu Leu Ala Ala
1 5 10 15

Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala Ala Leu
20 25 30

40 Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser Asn Trp Thr
35 40 45

45 Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr Ala Pro Trp Cys
50 55 60

Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu Ala Phe Ala Lys Asn
65 70 75 80

50 Gly Glu Ile Leu Gln Ile Ser Val Gly Lys Val Asp Val Ile Gln Glu
85 90 95

Pro Gly Leu Ser Gly Arg Phe Phe Val Thr Thr Leu Pro Ala Phe Phe
100 105 110

55 His Ala Lys Asp Gly Ile Phe Arg Arg Tyr Arg Gly Pro Gly Ile Phe
115 120 125

60 Glu Asp Leu Gln Asn Tyr Ile Leu Glu Lys Lys Trp Gln Ser Val Glu
130 135 140

350

Met Ala Ala Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val
 195 200 205

5 Gly Thr Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg
 210 215 220

Pro Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
 225 230 235 240

10 Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser Val
 245 250 255

Phe Pro Ala Glu Gly Leu Ile Pro Pro Tyr Gly Leu Thr Ala Asp Thr
 15 260 265 270

Tyr Ile Asp Leu Ala Ala Asp Glu Glu Gly Leu Trp Ala Val Tyr Ala
 275 280 285

20 Thr Arg Glu Asp Asp Arg His Leu Cys Leu Ala Lys Leu Asp Pro Gln
 290 295 300

Thr Leu Asp Thr Glu Gln Gln Trp Asp Thr Pro Cys Pro Arg Glu Asn
 305 310 315 320

25 Ala Glu Ala Ala Phe Xaa Ile Cys Gly Thr Leu Tyr Val Val Tyr Asn
 325 330 335

30 Thr Arg Pro Ala Ser Arg Ala Arg Ile Gln Cys Ser Phe Asp Ala Ser
 340 345 350

Gly Pro

35

(2) INFORMATION FOR SEQ ID NO: 252:

- (i) SEQUENCE CHARACTERISTICS:
- 40 (A) LENGTH: 109 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 252:

45 Met Leu Cys Ile Asn Gly Thr Thr Pro Arg Pro Leu Pro Val Pro Ser
 1 5 10 15

Pro Phe Gly Cys Met Ile Phe Phe Phe Phe Lys Asn Pro Trp Lys Gln
 20 25 30

50 Arg Leu Leu Gln Gly Trp Leu Gly Ala Arg Pro Ile His Leu Leu Gly
 35 40 45

Tyr Leu Pro Leu Ser Leu Leu Trp Cys Pro Phe Pro Leu Pro Cys Ala
 55 50 55 60

Arg Cys Ser Val Val Tyr Ile Ser Ser Pro Arg His Gly Ala His Ala
 65 70 75 80

60 Pro Arg Asp Met Ile Leu Ser Leu Val Leu Ala His Gly Ala Leu Tyr

349

Met Ala Leu Thr Phe Leu Leu Val Leu Leu Thr Leu Ala Thr Leu Cys
 1 5 10 15

Thr Arg Leu His Arg Asn Phe Arg Arg Gly Glu Ser Ile Tyr Trp Gly
 5 20 25 30

Pro Thr Ala Asp Ser Gln Asp Thr Val Ala Ala Val Leu Lys Arg Arg
 35 40 45

Leu Leu Gln Pro Ser Arg Arg Val Lys Arg Ser Arg Arg Arg Pro Xaa
 10 50 55 60

Xaa Pro Pro Thr Pro Asp Ser Gly Pro Glu Gly Glu Ser Ser Glu
 65 70 75

15

(2) INFORMATION FOR SEQ ID NO: 251:

20 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 354 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 251:

25 Met Gly Pro Ser Thr Pro Leu Leu Ile Leu Phe Leu Leu Ser Trp Ser
 1 5 10 15

Gly Pro Leu Gln Gly Gln Gln His His Leu Val Glu Tyr Met Glu Arg
 30 20 25 30

Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln Asp Gln Ser
 35 35 40 45

35 Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn Lys Met Leu Pro
 50 55 60

Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala Leu Arg Thr Glu Ala
 65 70 75 80

40 Asp Thr Ile Ser Gly Arg Val Asp Arg Leu Glu Arg Glu Val Asp Tyr
 85 90 95

Leu Glu Thr Gln Asn Pro Ala Leu Pro Cys Val Glu Phe Asp Glu Lys
 45 100 105 110

Val Thr Gly Gly Pro Gly Thr Lys Gly Lys Gly Arg Arg Asn Glu Lys
 115 120 125

50 Tyr Asp Met Val Thr Asp Cys Gly Tyr Thr Ile Ser Gln Val Arg Ser
 130 135 140

Met Lys Ile Leu Lys Arg Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys
 145 150 155 160

55 Asp Pro Leu Gly Gln Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln
 165 170 175

Asn Asp Thr Ala Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala
 180 185 190

60

348

Asn Gly Asp Gln Ser His Lys Met Thr Thr Ser Arg Cys Val Arg Leu
 260 265 270

5 Met Leu Ile Ser Met Ala Asn Asp Leu Lys Glu Val Trp Ile Ser Glu
 275 280 285

Gln Pro Phe Leu Leu Val Thr Tyr Leu Trp Gln Tyr Met Pro Thr Trp
 290 295 300

10 Ala Trp Trp Ile Thr Asn Lys Met Gly Lys Lys Arg Ile Glu Asn Phe
 305 310 315 320

Lys Ser Gly Val Asp Ala Asp Ser Ser Tyr Phe Lys Ile Phe Lys Thr
 15 325 330 335

Lys His Asp

20

(2) INFORMATION FOR SEQ ID NO: 249:

(i) SEQUENCE CHARACTERISTICS:
 25 (A) LENGTH: 96 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 249:

30 Met Gly Ala Arg Pro Gly Gly His Pro Gln Lys Trp Ser Phe Leu Trp
 1 5 10 15

Ser Leu Ala Leu Trp Leu Pro Leu Ala Leu Ser Val Ser Leu Phe Leu
 20 25 30

35 Gly Leu Ser Leu Ser Pro Pro Gln Pro Gly Leu Ser Leu Trp Cys Thr
 35 40 45

40 Leu Ser Tyr Cys Cys Glu Gln Trp Lys Phe Lys Gly Thr Pro Ser Pro
 50 55 60

Ala Leu Leu Asn Leu Gly Thr Gln Pro Lys Lys Asp Lys Lys Leu Glu
 65 70 75 80

45 Asp Ser Ile Ala Thr Gln Leu Arg Xaa Leu Pro Glu Lys Asn Ser Asn
 85 90 95

50

(2) INFORMATION FOR SEQ ID NO: 250:

55 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 79 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 250:

60

Xaa Val

5

(2) INFORMATION FOR SEQ ID NO: 248:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 339 amino acids

10

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 248:

15

Met Asn Trp Glu Leu Leu Leu Trp Leu Leu Val Leu Cys Ala Leu Leu
1 5 10 15Leu Leu Leu Val Gln Leu Leu Arg Phe Leu Arg Ala Asp Gly Asp Leu
20 25 30

20

Thr Leu Leu Trp Ala Glu Trp Gln Gly Arg Arg Pro Glu Trp Glu Leu
35 40 45Thr Asp Met Val Val Trp Val Thr Gly Ala Ser Ser Gly Ile Gly Glu
50 55 60

25

Glu Leu Ala Tyr Gln Leu Ser Lys Leu Gly Val Ser Leu Val Leu Ser
65 70 75 80

30

Ala Arg Arg Val His Glu Leu Glu Arg Val Lys Arg Arg Cys Leu Glu
85 90 95Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu Asp Leu
100 105 110

35

Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val Leu Gln Glu
115 120 125Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly Met Ser Gln Arg
130 135 140

40

Ser Leu Cys Met Asp Thr Ser Leu Asp Val Tyr Arg Lys Leu Ile Glu
145 150 155 160

45

Leu Asn Tyr Leu Gly Thr Val Ser Leu Thr Lys Cys Val Leu Pro His
165 170 175Met Ile Glu Arg Lys Gln Gly Lys Ile Val Thr Val Asn Ser Ile Leu
180 185 190

50

Gly Ile Ile Ser Val Pro Leu Ser Ile Gly Tyr Cys Ala Ser Lys His
195 200 205Ala Leu Arg Gly Phe Phe Asn Gly Leu Arg Thr Glu Leu Ala Thr Tyr
210 215 220

55

Pro Gly Ile Ile Val Ser Asn Ile Cys Pro Gly Pro Val Gln Ser Asn
225 230 235 240

60

Ile Val Glu Asn Ser Leu Ala Gly Glu Val Thr Lys Thr Ile Gly Asn
245 250 255

346

	100	105	110
	Arg His Ser Ser Met Trp Ser Leu Ser Arg Gln Thr Ser Pro Ala Ser		
	115	120	125
5	Ser Leu Thr Gly Ala Thr Phe Arg Lys Leu Asp Glu Lys Gly Ser Leu		
	130	135	140
	Gln Trp Asp Arg Ile Thr Arg Leu Glu Lys Gly Lys Ile Tyr Arg Gln		
10	145	150	155
	Gly Asn Leu Phe Asp Phe Leu Arg Leu Thr Glu Trp Arg Gly Pro Arg		
	165	170	175
15	Val Leu Tyr Phe Gly Asp His Leu Tyr Ser Asp Leu Ala Asp Leu Met		
	180	185	190
	Leu Arg His Gly Trp Arg Thr Gly Ala Ile Ile Pro Glu Leu Glu Arg		
	195	200	205
20	Glu Ile Arg Ile Ile Asn Thr Glu Gln Tyr Met His Ser Leu Thr Trp		
	210	215	220
	Gln Gln Ala Leu Thr Gly Leu Leu Glu Arg Met Gln Thr Tyr Gln Asp		
25	225	230	235
	Ala Glu Ser Arg Gln Val Leu Ala Ala Trp Met Lys Glu Arg Gln Glu		
	245	250	255
30	Leu Arg Cys Ile Thr Lys Ala Leu Phe Asn Ala Gln Phe Gly Ser Ile		
	260	265	270
	Phe Arg Thr Phe His Asn Pro Thr Tyr Phe Ser Arg Arg Leu Val Arg		
	275	280	285
35	Phe Ser Asp Leu Tyr Met Ala Ser Leu Ser Cys Leu Leu Asn Tyr Arg		
	290	295	300
	Val Asp Phe Thr Phe Tyr Pro Arg Arg Thr Pro Leu Gln His Glu Ala		
40	305	310	315
	Pro Leu Trp Met Asp Gln Leu Leu His Arg Leu His Glu Asp Pro Leu		
	325	330	335
45	Pro Trp Xaa		

50 (2) INFORMATION FOR SEQ ID NO: 247:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 247:

Met	Ala	Leu	Leu	Ser	Cys	Val	Val	Asp	Tyr	Phe	Leu	Gly	His	Ser	Leu
1				5				10					15		

60

345

Leu Ser Val Xaa Tyr Leu His Xaa Gly Phe Phe Tyr Ser Ser Leu Cys
 35 40 45

5 Lys Cys Cys Phe Val Leu Val Val Leu Ser Arg Ile Gly Ser Val Asn
 50 55 60

Glu Thr Trp Ser Cys Asn Phe Ser Ile
 65 70

10

(2) INFORMATION FOR SEQ ID NO: 245:

15 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 49 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 245:

20 Thr Pro Ala Thr Thr Ser Ser Ser Ser Ser Pro Leu Phe Leu Ser Ser
 1 5 10 15

Pro Asp Trp Ser Ser Cys Pro Ser Gly Ser Cys Ile Ala Pro Trp Cys
 20 25 30

25 Thr His Trp Ser Ser Ile Leu Pro Ser Leu Xaa Ile Thr Ser Ser Ile
 35 40 45

30 Pro

35 (2) INFORMATION FOR SEQ ID NO: 246:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 339 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 246:

Met Ala Arg Val Pro Pro Leu Ser Ser Ser Trp Thr Ser Ser Arg Tyr
 1 5 10 15

45 Arg Arg Trp Leu Cys Cys Pro Val Trp Trp Thr Thr Phe Trp Ala Thr
 20 25 30

Ala Trp Ser Leu Thr Lys His Leu Tyr Lys Asp Val Thr Asp Ala Ile
 35 40 45

50 Arg Asp Val His Val Lys Gly Leu Met Tyr Gln Trp Ile Glu Gln Asp
 50 55 60

55 Met Glu Lys Tyr Ile Leu Arg Gly Asp Glu Thr Phe Ala Val Leu Ser
 65 70 75 80

Arg Leu Val Ala His Gly Lys Gln Leu Phe Leu Ile Thr Asn Ser Pro
 85 90 95

60 Phe Ser Phe Val Asp Lys Gly Met Arg His Met Val Gly Pro Asp Trp

344

His Ile Leu Ala Met Glu Val Leu Ala Trp Leu Leu Ile Tyr Leu Leu
 20 25 30

5 Gly Pro Gly Trp Val Pro Ser Ala Leu Xaa Arg Leu His Pro Gly His
 35 40 45

Leu Ser Gly Ser Val Leu Val Ser Ala Ala
 50 55

10

(2) INFORMATION FOR SEQ ID NO: 243:

15

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 123 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 243:

20

Met Ile Leu Gly Gly Ile Val Val Val Leu Val Phe Thr Gly Phe Val
 1 5 10 15

25

Trp Ala Ala His Asn Lys Asp Val Leu Arg Arg Met Lys Lys Arg Tyr
 20 25 30

Pro Thr Thr Phe Val Met Val Val Met Leu Ala Ser Tyr Phe Leu Ile
 35 40 45

30

Ser Met Phe Gly Gly Val Met Val Phe Val Phe Gly Ile Thr Phe Pro
 50 55 60

Leu Leu Leu Met Phe Ile His Ala Ser Leu Arg Leu Arg Asn Leu Lys
 65 70 75 80

35

Asn Lys Leu Glu Asn Lys Met Glu Gly Ile Gly Leu Lys Arg Thr Pro
 85 90 95

40

Met Gly Ile Val Leu Asp Ala Leu Glu Gln Gln Glu Glu Gly Ile Asn
 100 105 110

Arg Leu Thr Asp Tyr Ile Ser Lys Val Lys Glu
 115 120

45

(2) INFORMATION FOR SEQ ID NO: 244:

50

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 73 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 244:

55

Ala Leu Val Ser Gly Gln Leu Cys Met Glu Ile Ala Arg Gly Asn Ile
 1 5 10 15

Phe Phe Leu Asn Xaa Leu Val Thr Thr Phe Cys Cys Ser Cys Leu Leu
 20 25 30

60

Pro Pro Leu Pro Pro His Pro Val Val Ala Pro Pro Thr Pro Ser Pro
 50 55 60

5 Ser Arg Gly Cys Val Leu Leu
 65 70

10 (2) INFORMATION FOR SEQ ID NO: 240:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 71 amino acids

(B) TYPE: amino acid

15 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 240:

Met Pro Gly Thr Phe Leu Arg Pro Phe Val Phe Leu Phe Leu Phe Ile
 1 5 10 15

20 Cys Cys Cys Leu His Ser Gly Gly Leu Gly Gly Val Pro Leu Pro Pro
 20 25 30

25 Phe Pro Pro Gln Ala Gln Arg Gly Glu Gly Pro Gly Lys Trp Met Ser
 35 40 45

Pro Pro Leu Pro Pro His Pro Val Val Ala Pro Pro Thr Pro Ser Pro
 50 55 60

30 Ser Arg Gly Cys Val Leu Leu
 65 70

35 (2) INFORMATION FOR SEQ ID NO: 241:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 amino acids

(B) TYPE: amino acid

40 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 241:

Met Phe Tyr Val Leu Ser Val Ser Xaa Leu Xaa Leu Phe Leu Ala Cys
 1 5 10 15

45 Gly Leu Cys Leu Xaa Leu Leu Thr Gly Lys Leu Leu
 20 25

50

(2) INFORMATION FOR SEQ ID NO: 242:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 58 amino acids

(B) TYPE: amino acid

55 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 242:

Met Lys Leu Phe Asp Ala Ser Pro Thr Phe Phe Ala Phe Leu Leu Gly
 1 5 10 15

60

342

225 230 235 240

Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala Pro
 245 250 255

5 Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile Thr Ser
 260 265 270

10 Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg Ile Ser Arg
 275 280 285

Ser Ile Arg Lys Leu Gln Cys Xaa
 290 295

15

(2) INFORMATION FOR SEQ ID NO: 238:

- 20 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 92 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 238:

25 Met Ala Ser Leu Gly His Ile Leu Val Phe Cys Val Gly Leu Leu Thr
 1 5 10 15

Met Ala Lys Ala Glu Ser Pro Lys Glu His Asp Pro Phe Thr Tyr Asp
 20 25 30

30 Tyr Gln Ser Leu Gln Ile Gly Gly Leu Val Ile Ala Gly Ile Leu Phe
 35 40 45

Ile Leu Gly Ile Leu Ile Val Leu Ser Arg Arg Cys Arg Cys Lys Phe
 35 50 55 60

Asn Gln Gln Gln Arg Thr Gly Glu Pro Asp Glu Glu Gly Thr Phe
 65 70 75 80

40 Arg Ser Ser Ile Arg Arg Leu Ser Xaa Arg Xaa Arg
 85 90

45 (2) INFORMATION FOR SEQ ID NO: 239:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 71 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 239:

Met Pro Gly Thr Phe Leu Arg Pro Phe Val Phe Leu Phe Leu Phe Ile
 1 5 10 15

55 Cys Cys Cys Leu His Ser Gly Gly Leu Gly Gly Val Pro Leu Pro Pro
 20 25 30

Phe Pro Pro Gln Ala Gln Arg Gly Glu Gly Pro Gly Lys Trp Met Ser
 60 35 40 45

Phe Tyr Ile Leu Ser Ser Gly Leu Ile Leu Leu Gln Thr Thr Asn Ser
 290 295 300

5 Val Phe Asn Lys Thr Leu Leu Lys Gln
 305 310

10 (2) INFORMATION FOR SEQ ID NO: 237:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 296 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 237:

Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser His
 1 5 10 15

20 Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln Pro Asp
 20 25 30

Phe Ser Tyr Lys Arg Xaa Asn Cys Lys Pro Ile Pro Val Asn Leu Gln
 25 35 40 45

Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu Pro Asn Leu Leu
 50 55 60

30 Gly His Glu Thr Met Lys Glu Val Leu Glu Gln Ala Gly Ala Trp Ile
 65 70 75 80

Pro Leu Val Met Lys Gln Cys His Pro Asp Thr Lys Lys Phe Leu Cys
 85 90 95

35 Ser Leu Phe Ala Pro Val Cys Leu Asp Asp Leu Asp Glu Thr Ile Gln
 100 105 110

Pro Cys His Ser Leu Cys Val Gln Val Lys Asp Arg Cys Ala Pro Val
 40 115 120 125

Met Ser Ala Phe Gly Phe Pro Trp Pro Asp Met Leu Glu Cys Asp Arg
 130 135 140

45 Phe Pro Gln Asp Asn Asp Leu Cys Ile Pro Leu Ala Ser Ser Asp His
 145 150 155 160

Leu Leu Pro Ala Thr Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys
 165 170 175

50 Asn Lys Asn Asp Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn
 180 185 190

Asp Phe Ala Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg
 55 195 200 205

Asp Thr Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu
 210 215 220

60 Asn Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys

340

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 313 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 236:

Met Thr Arg Gly Gly Pro Gly Gly Arg Pro Gly Leu Pro Gln Pro Pro
 1 5 10 15
 Pro Leu Leu Leu Leu Leu Leu Leu Xaa Leu Leu Leu Val Thr Ala Glu
 20 25 30
 Pro Pro Lys Pro Ala Gly Val Tyr Tyr Ala Thr Ala Tyr Trp Met Pro
 15 35 40 45
 Ala Glu Lys Thr Val Gln Val Lys Asn Val Met Asp Lys Asn Gly Asp
 50 55 60
 Ala Tyr Gly Phe Tyr Asn Asn Ser Val Lys Thr Thr Gly Trp Gly Ile
 20 65 70 75 80
 Leu Glu Ile Arg Ala Gly Tyr Gly Ser Gln Thr Leu Ser Asn Glu Ile
 85 90 95
 Ile Met Phe Val Ala Gly Phe Leu Glu Gly Tyr Leu Thr Ala Pro His
 100 105 110
 Met Asn Asp His Tyr Thr Asn Leu Tyr Pro Gln Leu Ile Thr Lys Pro
 30 115 120 125
 Ser Ile Met Asp Lys Val Gln Asp Phe Met Glu Lys Gln Asp Lys Trp
 130 135 140
 Thr Arg Lys Asn Ile Lys Glu Tyr Lys Thr Asp Ser Phe Trp Arg His
 35 145 150 155 160
 Thr Gly Tyr Val Met Ala Gln Ile Asp Gly Leu Tyr Val Gly Ala Lys
 165 170 175
 Lys Arg Ala Ile Leu Glu Gly Thr Lys Pro Met Thr Leu Phe Gln Ile
 180 185 190
 Gln Phe Leu Asn Ser Val Gly Asp Leu Leu Asp Leu Ile Pro Ser Leu
 45 195 200 205
 Ser Pro Thr Lys Asn Gly Ser Leu Lys Val Phe Lys Arg Trp Asp Met
 210 215 220
 Gly His Cys Ser Ala Leu Ile Lys Val Leu Pro Gly Phe Glu Asn Ile
 225 230 235 240
 Leu Phe Ala His Ser Ser Trp Tyr Thr Tyr Ala Ala Met Leu Arg Ile
 245 250 255
 Tyr Lys His Trp Asp Phe Asn Xaa Ile Asp Lys Asp Thr Ser Ser Ser
 260 265 270
 Arg Leu Ser Phe Ser Ser Tyr Pro Gly Phe Leu Glu Ser Leu Asp Asp
 60 275 280 285

	Ala Thr Leu Ser Pro Gly Ala Ser Ser Arg Gly Trp Asp Asp Gly Asp	245	250	255
5	Thr Arg Ser Glu His Ser Tyr Ser Glu Ser Gly Ala Ser Gly Ser Ser	260	265	270
	Phe Glu Glu Leu Asp Leu Glu Gly Glu Gly Pro Leu Gly Glu Ser Arg	275	280	285
10	Leu Asp Pro Gly Thr Xaa Pro Leu Gly Thr Thr Lys Trp Leu Trp Glu	290	295	300
	Pro Thr Ala Pro Glu Lys Gly Lys Glu	305	310	

(2) INFORMATION FOR SEQ ID NO: 234:

20

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 234:

Pro Gln Ser Leu Ile Leu His Leu Leu Leu Phe Phe Phe Leu Leu Phe
1 5 10 15

30 Leu Phe Phe Ile Phe Ile Phe Leu Phe Phe Leu Gln Cys Leu Thr Phe
20 25 30

Leu Phe Xaa Lys Pro Arg Gly Arg Tyr His Gly Leu Cys Phe Lys Phe
35 40 45

40

(2) INFORMATION FOR SEQ ID NO: 235:

45 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 34 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 235:

50 Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp Leu
1 5 10 15

Cys Cys Ala Thr Pro Arg Met His Cys Ser Val Glu Met Ala Met Asn
20 25 30

55 Pro Val

60 (2) INFORMATION FOR SEQ ID NO: 236:

Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
 275 280 285

5 Gln Asp Ala Cys Leu Pro Ile Arg Cys His Arg Cys Arg
 290 295 300

(2) INFORMATION FOR SEQ ID NO: 233:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 313 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 233:

Met Ser Asp Leu Leu Leu Leu Gly Leu Ile Gly Gly Leu Thr Leu Leu
 1 5 10 15

20 Leu Leu Leu Thr Leu Leu Ala Phe Ala Gly Tyr Ser Gly Leu Leu Ala
 20 25 30

Gly Val Glu Val Ser Ala Gly Ser Pro Pro Ile Arg Asn Val Thr Val
 35 40 45

25

Ala Tyr Lys Phe His Met Gly Leu Tyr Gly Glu Thr Gly Arg Leu Phe
 50 55 60

30 Thr Glu Ser Cys Ser Ile Ser Pro Lys Leu Arg Ser Ile Ala Val Tyr
 65 70 75 80

Tyr Asp Asn Pro His Met Val Pro Pro Asp Lys Cys Arg Cys Ala Val
 85 90 95

35 Gly Ser Ile Leu Ser Glu Gly Glu Glu Ser Pro Ser Pro Glu Leu Ile
 100 105 110

Asp Leu Tyr Gln Lys Phe Gly Phe Lys Val Phe Ser Phe Pro Ala Pro
 115 120 125

40

Ser His Val Val Thr Ala Thr Phe Pro Tyr Thr Thr Ile Leu Ser Ile
 130 135 140

45 Trp Leu Ala Thr Arg Arg Val His Pro Ala Leu Asp Thr Tyr Ile Lys
 145 150 155 160

Glu Arg Lys Leu Cys Ala Tyr Pro Arg Leu Glu Ile Tyr Gln Glu Asp
 165 170 175

50 Gln Ile His Phe Met Cys Pro Leu Ala Xaa Gln Gly Asp Phe Tyr Val
 180 185 190

Pro Glu Met Lys Glu Thr Glu Trp Lys Trp Arg Gly Leu Val Glu Ala
 195 200 205

55

Ile Asp Thr Gln Val Asp Gly Thr Gly Ala Asp Thr Met Ser Asp Thr
 210 215 220

60 Ser Ser Val Ser Leu Glu Val Ser Pro Gly Ser Arg Glu Thr Ser Ala
 225 230 235 240

(2) INFORMATION FOR SEQ ID NO: 232:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 301 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 232:

10 Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Ala Phe Pro Ser
1 5 10 15

Leu Gly Ala Gly Gly Glu Thr Pro Glu Ala Pro Pro Glu Ser Trp Thr
20 25 30

15 Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Xaa
35 40 45

20 Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn
50 55 60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
65 70 75 80

25 Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
85 90 95

Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu
100 105 110

30 Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val
115 120 125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
35 130 135 140

Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
145 150 155 160

40 Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
165 170 175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
180 185 190

45 Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
195 200 205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
50 210 215 220

Leu Met Gly Lys Leu Val Ser Arg Arg Xaa Asn Glu His Trp Glu Tyr
225 230 235 240

55 Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
245 250 255

Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
260 265 270

60

336

Phe Ser Asn Leu Gln Thr Ile Tyr Ile Ser Cys Leu Gln His Ala Val
 35 40 45

5 Cys Lys His Ser Val Ile Trp Ser Ile Gln Leu Phe Val Arg Ala Leu
 50 55 60

Pro Ile Ser Lys Cys Ala Glu Leu Ser Ile Asp Gly Ile Phe Arg Ser
 65 70 75 80

10 Phe His Glu Asn Trp Lys Cys Ser Trp Val Ala Pro Thr Xaa
 85 90

15 (2) INFORMATION FOR SEQ ID NO: 230:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 37 amino acids

(B) TYPE: amino acid

20 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 230:

Met Gly Trp Ser Ala Gly Leu Leu Phe Leu Leu Ile Leu Tyr Leu Pro
 1 5 10 15

25 Val Pro Gly Trp Met Glu Arg Glu Asp Gly Gly Asp Gly Thr Ser Phe
 20 25 30

Thr Ser Gly Ser Trp
 35

30

35 (2) INFORMATION FOR SEQ ID NO: 231:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 81 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 231:

Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu Ser
 1 5 10 15

45 Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Leu Ala His Val Gln Thr
 20 25 30

Pro Pro Arg Ile Ser Arg Met Ser Asp Val Asn Val Ser Ala Leu Pro
 35 40 45

50 Ile Lys Lys Ile Leu Gly Ile Phe Ile Ile Arg Thr Tyr Leu Arg Lys
 50 55 60

Ile Val Ile Ala Phe Met Leu Trp Ser Pro Cys Leu Cys Gly Gly Leu
 55 70 75 80

Met

60

(2) INFORMATION FOR SEQ ID NO: 227:

5

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 227:

10

Met Ser Ile Phe Leu Val Met Ser Ile Ser Cys Ser Ser Thr Ser His
 1 5 10 15

15

Cys Tyr Ser Phe
 20

(2) INFORMATION FOR SEQ ID NO: 228:

20

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 94 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

25

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 228:

Met Ser Phe Ser Phe Ile Ile Phe Leu Leu Leu Val Cys Gln Glu Ile
 1 5 10 15

30

Thr Phe Cys Met Ser Tyr Gly Asp Ala Val Asn Cys Phe Ser Glu Cys
 20 25 30

Phe Ser Asn Leu Gln Thr Ile Tyr Ile Ser Cys Leu Gln His Ala Val
 35 40 45

35

Cys Lys His Ser Val Ile Trp Ser Ile Gln Leu Phe Val Arg Ala Leu
 50 55 60

40

Pro Ile Ser Lys Cys Ala Glu Leu Ser Ile Asp Gly Ile Phe Arg Ser
 65 70 75 80

Phe His Glu Asn Trp Lys Cys Ser Trp Val Ala Pro Thr Xaa
 85 90

45

(2) INFORMATION FOR SEQ ID NO: 229:

50

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 94 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 229:

55

Met Ser Phe Ser Phe Ile Ile Phe Leu Leu Leu Val Cys Gln Glu Ile
 1 5 10 15

Thr Phe Cys Met Ser Tyr Gly Asp Ala Val Asn Cys Phe Ser Glu Cys
 20 25 30

60

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 224:

5 Met Glu Ala Val Phe Thr Val Phe Phe Phe Leu Leu Phe Cys Phe
 1 5 10 15

10 (2) INFORMATION FOR SEQ ID NO: 225:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 155 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 225:

Met Gly Phe Gly Ala Thr Leu Ala Val Gly Leu Thr Ile Phe Val Leu
 1 5 10 15

20 Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys Ser Cys Cys Cys Leu
 20 25 30

25 Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
 35 40 45

Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
 50 55 60

30 Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
 65 70 75 80

Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr
 85 90 95

35 Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly
 100 105 110

Gly Ala Ala Ala Pro Tyr Pro Ala Ser Gln Pro Pro Tyr Asn Pro Xaa
 115 120 125

40 Tyr Met Asp Ala Pro Lys Xaa Xaa Ser Glu His Ser Leu Ala Ser Leu
 130 135 140

45 Ala Ala Thr Trp Leu Cys Cys Val Cys Ala Xaa
 145 150 155

50 (2) INFORMATION FOR SEQ ID NO: 226:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 226:

Met Gly Phe Gly Ala Thr Leu Ala Val Gly
 1 5 10

60

333

(A) LENGTH: 138 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 222:

5
Met Lys Phe Thr Thr Leu Leu Phe Leu Ala Ala Val Ala Gly Ala Leu
1 5 10 15

10 Val Tyr Ala Glu Asp Ala Ser Ser Asp Ser Thr Gly Ala Asp Pro Ala
20 25 30

Gln Glu Ala Gly Thr Ser Lys Pro Asn Glu Glu Ile Ser Gly Pro Ala
35 40 45

15 Glu Pro Ala Ser Pro Pro Glu Thr Thr Thr Thr Ala Gln Glu Xaa Ser
50 55 60

Ala Ala Ala Val Gln Gly Thr Ala Lys Val Thr Ser Ser Arg Gln Glu
65 70 75 80

20 Leu Asn Pro Leu Lys Ser Ile Val Glu Lys Ser Ile Leu Leu Thr Glu
85 90 95

Gln Ala Leu Ala Lys Ala Gly Lys Gly Met His Gly Gly Val Pro Gly
100 105 110

25 Gly Lys Gln Phe Ile Glu Asn Gly Ser Glu Phe Ala Gln Lys Leu Leu
115 120 125

30 Lys Lys Phe Ser Leu Leu Lys Pro Trp Ala
130 135

35 (2) INFORMATION FOR SEQ ID NO: 223:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 50 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 223:

Met Leu Gly Cys Gly Ile Pro Ala Leu Gly Leu Leu Leu Leu Gln
1 5 10 15

45 Xaa Ser Ala Asp Gly Asn Gly Ile Gln Gly Phe Phe Tyr Pro Trp Ser
20 25 30

Cys Glu Gly Asp Ile Trp Asp Arg Glu Ser Cys Gly Gly Gln Ala Ala
35 40 45

Ile Arg
50

55

(2) INFORMATION FOR SEQ ID NO: 224:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 amino acids

60

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 219:

5 Met Gln Pro Leu Asn Phe Ser Ser Thr Xaa Cys Ser Ser Phe Ser Pro
 1 5 10 15
 Pro Thr Thr Val Ile Leu Leu Ile Leu Leu Cys Phe Glu Gly Leu Leu
 20 25 30
 10 Phe Leu Ile Phe Thr Ser Val Met Phe Gly Thr Gln Val His Ser Ile
 35 40 45
 Cys Thr Asp Glu Thr Gly Ile Glu Gln Leu Lys Lys Glu Glu Arg Arg
 50 55 60
 15 Trp Ala Lys Lys Thr Lys Trp Met Asn Met Lys Ala Val Phe Gly His
 65 70 75 80
 Pro Phe Ser Leu Gly Trp Ala Ser Pro Phe Ala Thr Pro Asp Gln Gly
 85 90 95
 20 Lys Ala Asp Pro Tyr Gln Tyr Val Val
 100 105

25

(2) INFORMATION FOR SEQ ID NO: 220:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 220:

30 Met Tyr Thr Asn His Phe Asn Leu Tyr Leu Lys Tyr Ile Leu Leu Ile
 1 5 10 15
 Ile Leu Ile Leu Asn Met Thr Asn Ser Ser Ser Arg Tyr
 20 25

40

(2) INFORMATION FOR SEQ ID NO: 221:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 221:

45 Met Asn Glu Leu Leu Leu Phe Phe Phe Phe Phe Phe Leu His Phe
 1 5 10 15
 Val

55

(2) INFORMATION FOR SEQ ID NO: 222:

60 (i) SEQUENCE CHARACTERISTICS:

	50					55					60					
	Phe	Val	Val	Leu	Ile	Gly	Trp	Pro	Leu	Ile	Gly	Met.	Ile	Phe	Glu	Ile
	65					70					75					80
5	Tyr	Gly	Phe	Phe	Leu	Leu	Phe	Arg	Gly	Phe	Phe	Pro	Val	Val	Val	Gly
					85					90					95	
	Phe	Ile	Arg	Arg	Val	Pro	Val	Leu	Gly	Ser	Leu	Leu	Asn	Leu	Pro	Gly
10				100					105					110		
	Ile	Arg	Ser	Phe	Val	Asp	Lys	Val	Gly	Glu	Ser	Asn	Asn	Met	Val	
			115				120						125			

15

(2) INFORMATION FOR SEQ ID NO: 217:

20 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 47 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 217:

25 Met Ile Arg Lys Leu His Lys Ile Ile Val Phe Ser Pro Arg Val Ile
1 5 10 15

Val Leu Leu Asn Cys Phe Phe Phe Ile Lys Ala Lys Phe Val Leu Tyr
20 25 30

30 Ile Phe Val Phe His Val Leu Asp Gly Ser Ile Ser Tyr Pro Val
35 40 45

35

(2) INFORMATION FOR SEQ ID NO: 218:

40 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 41 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 218:

45 Met Leu Leu Asn Gln His Phe Lys Ile Phe Gly Ser Leu Ile His Met
1 5 10 15

Asn Leu Leu Phe Ala Leu Ile Ser Leu Gly Ser Ser Asn Leu Ser Gly
20 25 30

50 Val Gln Phe Cys Cys Glu Thr Val Gln
35 40

55 (2) INFORMATION FOR SEQ ID NO: 219:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 105 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

330

Gln Val Ser Cys Pro Tyr Asp Ser Met Lys His Trp Gly Arg Arg Lys
 35 40 45
 5 Ala Trp Cys Arg Gln Leu Gly Glu Lys Gly Pro Cys Gln Arg Val Val
 50 55 60
 Ser Thr His Asn Leu Trp Leu Leu Ser Phe Leu Arg Arg Trp Asn Gly
 65 70 75 80
 10 Ser Thr Ala Ile Thr Asp Asp Thr Leu Gly Gly Thr Leu Thr Ile Thr
 85 90 95
 Leu Arg Asn Leu Gln Pro His Asp Ala Gly Leu Tyr Gln Cys Gln Ser
 15 100 105 110
 Leu His Gly Ser Glu Ala Asp Thr Leu Arg Lys Val Leu Val Glu Val
 115 120 125
 20 Leu Ala Asp Pro Leu Asp His Arg Asp Ala Gly Asp Leu Trp Phe Pro
 130 135 140
 Gly Glu Ser Glu Ser Phe Glu Asp Ala His Val Glu His Ser Ile Ser
 25 145 150 155 160
 Arg Ser Leu Leu Glu Gly Glu Ile Pro Phe Pro Pro Thr Ser Ile Leu
 165 170 175
 Leu Leu Leu Ala Cys Ile Phe Leu Ile Lys Ile Leu Ala Ala Ser Ala
 30 180 185 190
 Leu Trp Ala Ala Ala Trp His Gly Gln Lys Pro Gly Thr His Pro Pro
 195 200 205
 35 Ser Glu Leu Asp Cys Gly His Asp Pro Gly Tyr Gln Leu Gln Thr Leu
 210 215 220
 Pro Gly Leu Arg Asp Thr Xaa
 40 225 230

(2) INFORMATION FOR SEQ ID NO: 216:

45 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 127 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 216:
 50 Met Gly Leu Thr Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile
 1 5 10 15
 Leu Phe Phe Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val
 55 20 25 30
 Ala Gly Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe
 35 40 45
 60 Phe Gln Lys His Lys Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val

329

Met Glu Pro Leu Arg Leu Leu Ile Leu Leu Phe Val Thr Glu Leu Ser
 1 5 10 15
 Gly Ala His Asn Thr Thr Val Phe Gln Gly Val Ala Gly Gln Ser Leu
 5 20 25 30
 Gln Val Ser Cys Pro Tyr Asp Ser Met Lys His Trp Gly Arg Arg Lys
 35 40 45
 Ala Trp Cys Arg Gln Leu Gly Glu Lys Gly Pro Cys Gln Arg Val Val
 10 50 55 60
 Ser Thr His Asn Leu Trp Leu Leu Ser Phe Leu Arg Arg Trp Asn Gly
 65 70 75 80
 15 Ser Thr Ala Ile Thr Asp Asp Thr Leu Gly Gly Thr Leu Thr Ile Thr
 85 90 95
 Leu Arg Asn Leu Gln Pro His Asp Ala Gly Leu Tyr Gln Cys Gln Ser
 20 100 105 110
 Leu His Gly Ser Glu Ala Asp Thr Leu Arg Lys Val Leu Val Glu Val
 115 120 125
 25 Leu Ala Asp Pro Leu Asp His Arg Asp Ala Gly Asp Leu Trp Phe Pro
 130 135 140
 Gly Glu Ser Glu Ser Phe Glu Asp Ala His Val Glu His Ser Ile Ser
 145 150 155 160
 30 Arg Ser Leu Leu Glu Gly Glu Ile Pro Phe Pro Pro Thr Ser Ile Leu
 165 170 175
 Leu Leu Leu Ala Cys Ile Phe Leu Ile Lys Ile Leu Ala Ala Ser Xaa
 35 180 185 190
 Leu Trp Ala Ala Ala Trp His Gly Gln Lys Pro Gly Thr His Pro Pro
 195 200 205
 40 Ser Glu Leu Asp Cys Gly His Asp Pro Gly Tyr Gln Leu Gln Thr Leu
 210 215 220
 Pro Gly Leu Arg Asp Thr
 225 230
 45

(2) INFORMATION FOR SEQ ID NO: 215:

- 50 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 231 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 215:

55 Met Glu Pro Leu Arg Leu Leu Ile Leu Leu Phe Val Thr Glu Leu Ser
 1 5 10 15
 Gly Ala His Asn Thr Thr Val Phe Gln Gly Val Ala Gly Gln Ser Leu
 60 20 25 30

328

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 211:

5 Met Ser Leu Phe Phe Leu Leu Thr Leu Ile Ser Lys Leu His Gly Asp
 1 5 10 15
 Ala Glu Val Cys
 20

10

(2) INFORMATION FOR SEQ ID NO: 212:

(i) SEQUENCE CHARACTERISTICS:

15 (A) LENGTH: 55 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 212:

20 Met Pro His Pro Pro Leu Pro Glu Thr Ser Leu Glu Ala Gln Leu Pro
 1 5 10 15
 Met Gly Leu Leu Gln Leu Leu Arg Cys Ser Val Gln Ala Trp Ser Pro
 20 25 30
 25 Pro Pro Ser Ser Phe Cys Pro Gly Ser Glu Pro Arg Ser Ala Ser Ala
 35 40 45
 30 His Trp Gly Tyr Trp Trp Pro
 50 55

35 (2) INFORMATION FOR SEQ ID NO: 213:

(i) SEQUENCE CHARACTERISTICS:

40 (A) LENGTH: 35 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 213:

Asp Pro Glu Thr Arg Trp His His Gly Gly Ser Ala Gln Asn Gly Leu
 1 5 10 15
 45 Leu Met Leu Ile Ser Val Leu Gln Gln Pro Val Ile Gly Thr Gly Ser
 20 25 30
 Tyr Leu Cys
 35

50

(2) INFORMATION FOR SEQ ID NO: 214:

(i) SEQUENCE CHARACTERISTICS:

55 (A) LENGTH: 230 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 214:

60

327

His Phe Ser Thr Trp Lys Ala Thr Thr Leu Asp Gly Leu Pro Asn Gln
 290 295 300
 5 Leu Thr Pro Ser Glu Pro His Leu Cys Leu Leu Asp Val Gly Tyr Leu
 305 310 315 320
 Ile Asn Thr Ser Cys Leu Pro Leu Leu Gln Pro Thr Arg Asp Val Asp
 325 330 335
 10 Leu Ile Leu Ser Leu Asp Tyr Asn Leu His Gly Ala Phe Gln Gln Leu
 340 345 350
 Gln Leu Leu Gly Arg Phe Cys Gln Glu Gln Gly Ile Pro Phe Pro Pro
 15 355 360 365
 Ile Ser Pro Ser Pro Glu Glu Gln Leu Gln Pro Arg Glu Cys His Thr
 370 375 380
 20 Phe Ser Asp Pro Thr Cys Pro Gly Ala Pro Ala Val Leu His Phe Pro
 385 390 395 400
 Leu Val Ser Asp Ser Phe Arg Glu Tyr Ser Ala Pro Gly Val Arg Arg
 405 410 415
 25 Thr Pro Glu Glu Ala Ala Ala Gly Glu Val Asn Leu Ser Ser Ser Asp
 420 425 430
 Ser Pro Tyr His Tyr Thr Lys Val Thr Tyr Ser Gln Glu Asp Val Asp
 30 435 440 445
 Lys Leu Leu His Leu Thr His Tyr Asn Val Cys Asn Asn Gln Glu Gln
 450 455 460
 35 Leu Leu Glu Ala Leu Arg Gln Ala Val Gln Arg Arg Arg Gln Arg Arg
 465 470 475 480
 Pro His Xaa

40

(2) INFORMATION FOR SEQ ID NO: 210:

45

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 210:

50

Leu Glu Val Gly Cys Ile Gln Val Ala Pro Asp Thr Phe
 1 5 10

55

(2) INFORMATION FOR SEQ ID NO: 211:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

60

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 483 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 209:

Met Ala Thr Gly Gly Gly Ile Arg Ala Met Thr Ser Leu Tyr Gly Gln
 1 5 10 15
 Leu Ala Gly Leu Lys Glu Leu Gly Leu Leu Asp Cys Xaa Ser Tyr Ile
 20 25 30
 Thr Gly Ala Ser Gly Ser Thr Trp Ala Leu Ala Asn Leu Tyr Lys Asp
 15 35 40 45
 Pro Glu Trp Ser Gln Lys Asp Leu Ala Gly Pro Thr Glu Leu Leu Lys
 50 55 60
 Thr Gln Val Thr Lys Asn Lys Leu Gly Val Leu Ala Pro Ser Gln Leu
 20 65 70 75 80
 Gln Arg Tyr Arg Gln Glu Leu Ala Glu Arg Ala Arg Leu Gly Tyr Pro
 85 90 95
 Ser Cys Phe Thr Asn Leu Trp Ala Leu Ile Asn Glu Ala Leu Leu His
 100 105 110
 Asp Glu Pro His Asp His Lys Leu Ser Asp Gln Arg Glu Ala Leu Ser
 30 115 120 125
 His Gly Gln Asn Pro Leu Pro Ile Tyr Cys Ala Leu Asn Thr Lys Gly
 130 135 140
 Gln Ser Leu Thr Thr Phe Glu Phe Gly Glu Trp Cys Glu Phe Ser Pro
 35 145 150 155 160
 Tyr Glu Val Gly Phe Pro Lys Tyr Gly Ala Phe Ile Pro Ser Glu Leu
 165 170 175
 Phe Gly Ser Glu Phe Phe Met Gly Gln Leu Met Lys Arg Leu Pro Glu
 40 180 185 190
 Ser Arg Ile Cys Phe Leu Glu Gly Ile Trp Ser Asn Leu Tyr Ala Ala
 45 195 200 205
 Asn Leu Gln Asp Ser Leu Tyr Trp Ala Ser Glu Pro Ser Gln Phe Trp
 210 215 220
 Asp Arg Trp Val Arg Asn Gln Ala Asn Leu Asp Lys Glu Gln Val Pro
 50 225 230 235 240
 Leu Leu Lys Ile Glu Glu Pro Pro Ser Thr Ala Gly Arg Ile Ala Glu
 245 250 255
 Phe Phe Thr Asp Leu Leu Thr Trp Arg Pro Leu Ala Gln Ala Thr His
 55 260 265 270
 Asn Phe Leu Arg Gly Leu His Phe His Lys Asp Tyr Phe Gln His Pro
 60 275 280 285

325

1 5 10 15
 Gln Phe Leu Cys His Glu Phe Leu Arg Xaa Asn Pro Arg Val Thr Arg
 20 25 30
 5 Leu Leu Ser Glu Met Arg Ile His Leu Leu Pro Ser Met Asn Pro Asp
 35 40 45
 Gly Tyr Glu Ile Ala Tyr His Arg Gly Ser Glu Leu Val Gly Trp Ala
 10 50 55 60
 Glu Gly Arg Trp Asn Asn Gln Ser Ile Asp Leu Asn His Asn Phe Ala
 65 70 75 80
 15 Xaa Leu Asn Thr Pro Leu Trp Glu Ala Gln Asp Asp Gly Lys Val Pro
 85 90 95
 His Ile Val Pro Asn His His Leu Pro Leu Pro Thr Tyr Tyr Thr Leu
 100 105 110
 20 Pro Asn Ala Thr Val Ala Pro Glu Thr Arg Ala Val Ile Lys Trp Met
 115 120 125
 Lys Arg Ile Pro Phe Val Leu Ser Ala Asn Leu His Gly Gly Glu Leu
 25 130 135 140
 Val Val Ser Tyr Pro Phe Asp Met Thr Arg Thr Pro Trp Ala Ala Arg
 145 150 155 160
 30 Glu Leu Thr Pro Thr Pro Asp Asp Ala Val Phe Arg Trp Leu Ser Thr
 165 170 175
 Val Tyr Ala Gly Ser Asn Leu Ala Met Gln Asp Thr Ser Arg Arg Pro
 180 185 190
 35 Cys His Ser Gln Asp Phe Ser Val His Gly Asn Ile Ile Asn Gly Ala
 195 200 205
 40

(2) INFORMATION FOR SEQ ID NO: 208:

45

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

50

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 208:

Met Glu Ile Ser Cys Leu Leu Leu Leu Ile Gln Asp Ser Asp Glu Met
 1 5 10 15

55 Glu Asp Gly Pro Gly Val Gln Asp
 20

60 (2) INFORMATION FOR SEQ ID NO: 209:

324

35

5 (2) INFORMATION FOR SEQ ID NO: 205:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 amino acids

(B) TYPE: amino acid

10 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 205:

Asp Cys Xaa His Val Ser Val Leu Gln Ser Thr Ile Ser Pro Leu Leu
 1 5 10 15
 Pro Leu Pro Leu Leu Leu Pro His Gly Asn Cys Glu Glu Ala Pro Trp
 20 25 30
 Gln Ala Ala Val Ile Gly Gly Gly Asp Arg Ile
 35 40

25 (2) INFORMATION FOR SEQ ID NO: 206:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 85 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 206:

Met Arg Asp Cys Leu Ser Leu Lys Pro Arg Pro Leu Phe Pro Thr Gln
 1 5 10 15
 Phe Phe Phe Ile Leu Leu Leu Ile Phe Ile Ala Glu Val Ala Ala Ala
 20 25 30
 Val Val Ala Leu Val Tyr Thr Thr Met Val Arg His Trp Asp Gly Gly
 35 40 45
 Arg Glu Glu Asp Trp Ala Lys Pro Trp Glu Trp Ala Val Ala Cys Glu
 50 55 60
 Trp Pro Pro Ser Val Pro Ala Pro Lys His Trp Pro Ala Ser Pro Arg
 65 70 75 80
 Leu Ser Thr Ser Xaa
 85

50

(2) INFORMATION FOR SEQ ID NO: 207:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 208 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 207:

60 Met His Gly Asn Glu Ala Leu Gly Arg Glu Leu Leu Leu Leu Met

323

Thr Pro Ala Pro Thr Gln Ser Pro Glu Glu Val Arg Arg Leu His Leu
 165 170 175
 5 Cys Thr Ser Phe Met Asp Met Leu Lys Ala Leu Phe Arg Thr Leu Gln
 180 185 190
 Ala Met Leu Leu Gly Val Trp Ile Leu Leu Leu Leu Ala Ser Leu Ala
 195 200 205
 10 Pro Leu Trp Leu Tyr Cys Trp Arg Met Phe Pro Thr Lys Gly Lys Arg
 210 215 220
 Asp Gln Lys Glu Met Leu Glu Val Ser Gly Ile Xaa
 225 230 235
 15

(2) INFORMATION FOR SEQ ID NO: 203:

20 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 93 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 203:
 25 Met Ile His Leu Gly His Ile Leu Phe Leu Leu Leu Leu Pro Val Ala
 1 5 10 15
 30 Ala Ala Gln Thr Thr Pro Gly Glu Arg Ser Ser Leu Pro Ala Phe Tyr
 20 25 30
 Pro Gly Thr Ser Gly Ser Cys Ser Gly Cys Gly Ser Leu Ser Leu Pro
 35 40 45
 35 Leu Leu Ala Gly Leu Val Ala Ala Asp Ala Val Ala Ser Leu Leu Ile
 50 55 60
 Val Gly Ala Val Phe Leu Cys Ala Arg Pro Arg Arg Ser Pro Ala Gln
 65 70 75 80
 40 Glu Asp Gly Lys Val Tyr Ile Asn Met Pro Gly Arg Gly
 85 90

45

(2) INFORMATION FOR SEQ ID NO: 204:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 35 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 204:
 55 Met Trp Ser Ala Gly Arg Gly Gly Ala Ala Trp Pro Val Leu Leu Gly
 1 5 10 15
 Leu Leu Leu Ala Leu Leu Val Pro Gly Gly Gly Ala Ala Lys Thr Gly
 20 25 30
 60 Ala Asp Ser

322

210 215 220

Arg Ser Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln
225 230 235 240

5 Leu Gln Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu Asn
 245 250 255

10 Lys Asp Ser Leu Val Asp Asp Glu Glu Glu Lys Glu Asp Leu Gly Asp
 260 265 270

 Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu Asp Asn Leu Ala Ala Gly
 275 280 285

15 Val Asp Glu Glu Arg Ser Glu Ala Asn Asp Gln Gly Pro Pro Gly Glu
 290 295 300

 Asp Gly Val Thr Arg Glu Xaa Ser Arg Ala Xaa
 305 310 315

20

(2) INFORMATION FOR SEQ ID NO: 202:

25

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 236 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 202:

30

Met Gly Thr Ala Asp Ser Asp Glu Met Ala Pro Glu Ala Pro Gln His
1 5 10 15

35

Thr His Ile Asp Val His Ile His Gln Glu Ser Ala Leu Ala Lys Leu
20 25 30

Leu Leu Thr Cys Cys Ser Ala Leu Arg Pro Arg Ala Thr Gln Ala Arg
35 40 45

40

Gly Ser Ser Arg Leu Leu Val Ala Ser Trp Val Met Gln Ile Val Leu
50 55 60

Gly Ile Leu Ser Ala Val Leu Gly Gly Phe Phe Tyr Ile Arg Asp Tyr
65 70 75 80

45

Thr Leu Leu Val Thr Ser Gly Ala Ala Ile Trp Thr Gly Ala Val Ala
85 90 95

50

Val Leu Ala Gly Ala Ala Ala Phe Ile Tyr Glu Lys Arg Gly Gly Thr
100 105 110

Tyr Trp Ala Leu Leu Arg Thr Leu Leu Ala Leu Ala Ala Phe Ser Thr
115 120 125

55

Ala Ile Ala Ala Leu Lys Leu Trp Asn Glu Asp Phe Arg Tyr Gly Tyr
130 135 140

Ser Tyr Tyr Asn Ser Ala Cys Arg Ile Ser Ser Ser Ser Asp Trp Asn
145 150 155 160

60

321

Ala Asp Ile Pro Asp Arg Phe Ser Ala Ala Lys Asp Glu Ala His Asn
85 90 95

5 Ala Cys Val Leu Thr Ile Ser Pro Val Gln Pro Glu Asp Asp Ala Asp
100 105 110

Tyr Tyr Cys Ser Val Gly Tyr Gly Phe Ser Pro
115 120

10

(2) INFORMATION FOR SEQ ID NO: 201:

15 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 315 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 201:

20 Met Ala Gly Gly Arg Cys Gly Pro Xaa Leu Thr Ala Leu Leu Ala Ala
1 5 10 15

25 Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala Ala Leu
20 25 30

Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser Asn Trp Thr
35 40 45

30 Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr Ala Pro Trp Cys
50 55 60

Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu Ala Phe Ala Lys Asn
65 70 75 80

35 Gly Glu Ile Leu Gln Ile Ser Val Gly Lys Val Asp Val Ile Gln Glu
85 90 95

Pro Gly Leu Ser Gly Arg Phe Phe Val Thr Thr Leu Pro Ala Phe Phe
100 105 110

His Ala Lys Asp Gly Ile Phe Arg Arg Tyr Arg Gly Pro Gly Ile Phe
115 120 125

45 Glu Asp Leu Gln Asn Tyr Ile Leu Glu Lys Lys Trp Gln Ser Val Glu
130 135 140

Pro Leu Thr Gly Trp Lys Ser Pro Ala Ser Leu Thr Met Ser Gly Met
145 150 155 160

50 Ala Gly Leu Phe Ser Ile Ser Gly Lys Ile Trp His Leu His Asn Tyr
165 170 175

Phe Thr Val Thr Leu Gly Ile Pro Ala Trp Cys Ser Tyr Val Phe Phe
180 185 190

Val Ile Ala Thr Leu Val Phe Gly Leu Phe Met Gly Leu Val Leu Val
195 200 205

60 val Ile Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu

65

70

5 (2) INFORMATION FOR SEQ ID NO: 199:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 113 amino acids

(B) TYPE: amino acid

10 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 199:

Met Phe Thr Met Leu Cys Ile Asn Gly Thr Thr Pro Arg Pro Leu Pro
 1 5 10 15

Val Pro Ser Pro Phe Gly Cys Met Ile Phe Phe Phe Phe Lys Asn Pro
 20 25 30

Trp Lys Gln Arg Leu Leu Gln Gly Trp Leu Gly Ala Arg Pro Ile His
 35 40 45

Leu Leu Gly Tyr Leu Pro Leu Ser Leu Leu Trp Cys Pro Phe Pro Leu
 50 55 60

Pro Cys Ala Arg Cys Ser Val Val Tyr Ile Ser Ser Pro Arg His Gly
 65 70 75 80

Ala His Ala Pro Arg Asp Met Ile Leu Ser Leu Val Leu Ala His Gly
 85 90 95

Ala Leu Tyr Lys Glu Leu Gly Gly Arg Gly Arg Lys Trp Glu Pro Ser
 100 105 110

Xaa

35

40 (2) INFORMATION FOR SEQ ID NO: 200:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 123 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 200:

Met Ala Cys Arg Cys Leu Ser Phe Leu Leu Met Gly Thr Phe Leu Ser
 1 5 10 15

Val Ser Gln Thr Val Leu Ala Gln Leu Asp Ala Leu Leu Val Phe Pro
 20 25 30

Gly Gln Val Ala Gln Leu Ser Cys Thr Leu Ser Pro Gln His Val Thr
 35 40 45

Ile Arg Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg Ala Gly Ser Ala
 50 55 60

Pro Arg Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu Asp His His Arg Pro
 65 70 75 80

60

319

Asn Asp Thr Ala Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala
 180 185 190

5 Met Ala Ala Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val
 195 200 205

Gly Thr Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg
 210 215 220

10 Pro Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
 225 230 235 240

Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser Val
 15 245 250 255

Phe Pro Ala Glu Gly Leu Ile Pro Pro Tyr Gly Leu Thr Ala Asp Thr
 260 265 270

20 Tyr Ile Asp Leu Ala Ala Asp Glu Glu Gly Leu Trp Ala Val Tyr Ala
 275 280 285

Thr Arg Glu Asp Asp Arg His Leu Cys Leu Ala Lys Leu Asp Pro Gln
 290 295 300

25 Thr Leu Asp Thr Glu Gln Gln Trp Asp Thr Pro Cys Pro Arg Glu Asn
 305 310 315 320

Ala Glu Ala Ala Phe Val Ile Cys Gly Thr Leu Tyr Val Val Tyr Asn
 30 325 330 335

Thr Arg Pro Ala Ser Arg Ala Arg Ile Gln Cys Ser Phe Asp Ala Ser
 340 345 350

35 Gly Pro Xaa
 355

40 (2) INFORMATION FOR SEQ ID NO: 198:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 74 amino acids

(B) TYPE: amino acid

45 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 198:

Met Val Leu Pro Leu Leu Ile Phe Val Leu Leu Pro Lys Val Val Asn
 1 5 10 15

50 Thr Ser Asp Pro Asp Met Arg Arg Glu Met Glu Gln Ser Met Asn Met
 20 25 30

Leu Asn Ser Asn His Glu Leu Pro Asp Val Ser Glu Phe Met Thr Arg
 35 40 45

Leu Phe Ser Ser Lys Ser Ser Gly Lys Ser Ser Ser Gly Ser Ser Lys
 50 55 60

60 Thr Gly Lys Ser Gly Ala Gly Lys Arg Arg

(2) INFORMATION FOR SEQ ID NO: 196:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 45 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 196:

10 Met Ala Leu Thr Phe Leu Leu Val Leu Leu Thr Leu Ala Thr Ser Ala
1 5 10 15
His Gly Cys Thr Glu Thr Ser Asp Ala Gly Arg Ala Ser Thr Gly Gly
20 25 30
15 Pro Gln Arg Thr Ala Arg Thr Gln Trp Leu Leu Cys Xaa
35 40 45

20

(2) INFORMATION FOR SEQ ID NO: 197:

(i) SEQUENCE CHARACTERISTICS:

- 25 (A) LENGTH: 355 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 197:

30 Met Gly Pro Ser Thr Pro Leu Leu Ile Leu Phe Leu Leu Ser Trp Ser
1 5 10 15
Gly Pro Leu Gln Gly Gln Gln His His Leu Val Glu Tyr Met Glu Arg
20 25 30
35 Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln Asp Gln Ser
35 40 45
Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn Lys Met Leu Pro
50 55 60
40 Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala Leu Arg Thr Glu Ala
65 70 75 80
45 Asp Thr Ile Ser Gly Arg Val Asp Arg Leu Glu Arg Glu Val Asp Tyr
85 90 95
Leu Glu Thr Gln Asn Pro Ala Leu Pro Cys Val Glu Phe Asp Glu Lys
100 105 110
50 Val Thr Gly Gly Pro Gly Thr Lys Gly Lys Gly Arg Arg Asn Glu Lys
115 120 125
Tyr Asp Met Val Thr Asp Cys Gly Tyr Thr Ile Ser Gln Val Arg Ser
130 135 140
55 Met Lys Ile Leu Lys Arg Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys
145 150 155 160
60 Asp Pro Leu Gly Gln Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln
165 170 175

317

Ile Leu Phe Phe Ser Phe Gly Ser Ser Ser Leu Pro Pro Gly Leu Pro
 20 25 30

Pro Pro Ala Ser Leu Leu Cys Cys Ala Val Gln Trp Gly Ala Arg Ala
 5 35 40 45

Leu Phe Leu Pro Ala
 50

10

(2) INFORMATION FOR SEQ ID NO: 194:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 42 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 194:

20 Met Leu Val Thr Cys Ser Val Cys Cys Tyr Leu Phe Trp Leu Ile Ala
 1 5 10 15

Ile Leu Ala Gln Leu Asn Pro Leu Phe Gly Pro Gln Leu Lys Asn Glu
 20 25 30

25 Thr Ile Trp Tyr Leu Lys Tyr His Trp Pro
 35 40

30

(2) INFORMATION FOR SEQ ID NO: 195:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 102 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 195:

40 Met Glu Gly Thr Glu Met Gly Ala Arg Pro Gly Gly His Pro Gln Lys
 1 5 10 15

Trp Ser Phe Leu Trp Ser Leu Ala Leu Trp Leu Pro Leu Ala Leu Ser
 20 25 30

45 Val Ser Leu Phe Leu Gly Leu Ser Leu Ser Pro Pro Gln Pro Gly Leu
 35 40 45

Ser Leu Trp Cys Thr Leu Ser Tyr Cys Cys Glu Gln Trp Lys Phe Lys
 50 55 60

50 Gly Thr Pro Ser Pro Ala Leu Leu Asn Leu Gly Thr Gln Pro Lys Lys
 65 70 75 80

55 Asp Lys Lys Leu Glu Asp Ser Ile Ala Thr Gln Leu Arg Glu Leu Pro
 85 90 95

Glu Lys Asn Ser Asn Xaa
 100

60

316

65 70 75 80

Ala Arg Arg Val His Glu Leu Glu Arg Val Lys Arg Arg Cys Leu Glu
85 90 95

5 Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu Asp Leu
100 105 110

Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val Leu Gln Glu
10 115 120 125

Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly Met Ser Gln Arg
130 135 140

15 Ser Leu Cys Met Asp Thr Ser Leu Asp Val Tyr Arg Lys Leu Ile Glu
145 150 155 160

Leu Asn Tyr Leu Gly Thr Val Ser Leu Thr Lys Cys Val Leu Pro His
165 170 175

20 Met Ile Glu Arg Lys Gln Gly Lys Ile Val Thr Val Asn Ser Ile Leu
180 185 190

Gly Ile Ile Ser Val Pro Leu Ser Ile Gly Tyr Cys Ala Ser Lys His
25 195 200 205

Ala Leu Arg Gly Phe Phe Asn Gly Leu Arg Thr Glu Leu Ala Thr Tyr
210 215 220

30 Pro Gly Ile Ile Val Ser Asn Ile Cys Pro Gly Pro Val Gln Ser Asn
225 230 235 240

Ile Val Glu Asn Ser Leu Ala Gly Glu Val Thr Lys Thr Ile Gly Asn
245 250 255

35 Asn Gly Asp Gln Ser His Lys Met Thr Thr Ser Arg Cys Val Arg Leu
260 265 270

Met Leu Ile Ser Met Ala Asn Asp Leu Lys Glu Val Trp Ile Ser Glu
40 275 280 285

Gln Pro Phe Leu Phe Ser Asn Ile Phe Val Ala Ile His Ala Asn Leu
290 295 300

45 Gly Leu Val Asp Asn Gln Gln Asp Gly Glu Glu Lys Asp Xaa
305 310 315

50 (2) INFORMATION FOR SEQ ID NO: 193:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 53 amino acids

(B) TYPE: amino acid

55 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 193:

Met Trp Pro Ser Phe Pro Gln Val Arg Gly Ser Phe Leu Phe Gly
1 5 10 15

60

315

Thr Gln His Ile Pro Leu Tyr Gln Met Ser Gly Phe Tyr Gly Lys Gly
 130 135 140
 5 Pro Ser Ile Lys Gln Phe Met Asp Ile Phe Ser Leu Pro Glu Met Ala
 145 150 155 160
 Leu Leu Ser Cys Val Val Asp Tyr Phe Leu Gly His Ser Leu Glu Phe
 165 170 175
 10 Asp Gln Ala His Leu Tyr Lys Asp Val Thr Asp Ala Ile Arg Asp Val
 180 185 190
 His Val Lys Gly Leu Met Tyr Gln Trp Ile Glu Gln Asp Met Glu Lys
 15 195 200 205
 Tyr Ile Leu Arg Gly Asp Glu Thr Phe Ala Val Leu Ser Arg Leu Val
 210 215 220
 20 Ala His Gly Lys Gln Leu Phe Leu Ile Thr Asn Ser Pro Phe Ser Phe
 225 230 235 240
 Val Asp Lys Gly Met Arg His Met Val Gly Pro Asp Trp Arg His Ser
 245 250 255
 25 Ser Met Trp Ser Leu Ser Arg Gln Thr Ser Pro Ala Ser Ser Leu Thr
 260 265 270
 Gly Ala Ser Phe Xaa Glu Asn Ser Met Arg Arg Ala His Phe Ser Gly
 30 275 280 285
 Thr Gly Ser Pro Ala Trp Lys Arg Ala Arg Ser Ile Gly Arg Glu Thr
 290 295 300
 35 Cys Leu Thr Ser Tyr Ala Xaa
 305 310

40 (2) INFORMATION FOR SEQ ID NO: 192:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 318 amino acids

(B) TYPE: amino acid

45 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 192:

Met Asn Trp Glu Leu Leu Trp Leu Leu Val Leu Cys Ala Leu Leu
 1 5 10 15
 50 Leu Leu Leu Val Gln Leu Leu Arg Phe Leu Arg Ala Asp Gly Asp Leu
 20 25 30
 Thr Leu Leu Trp Ala Glu Trp Gln Gly Arg Arg Pro Glu Trp Glu Leu
 35 40 45
 55 Thr Asp Met Val Val Trp Val Thr Gly Ala Ser Ser Gly Ile Gly Glu
 50 55 60
 60 Glu Leu Ala Tyr Gln Leu Ser Lys Leu Gly Val Ser Leu Val Leu Ser

314

65 70 75 80

Cys Gly Gly Arg

5

(2) INFORMATION FOR SEQ ID NO: 190:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 58 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 190:

15

Met Met Gly Val Leu Gln Leu Leu His Ile Phe Trp Ala Tyr Leu Ile
1 5 10 15

20

Leu Arg Met Ala His Lys Phe Ile Thr Gly Lys Leu Val Glu Asp Glu
20 25 30

Arg Ser Thr Gly Lys Lys Gln Arg Ala Gln Arg Gly Arg Arg Leu Gln
35 40 45

25

Leu Gly Glu Glu Gln Arg Ala Gly Pro Xaa
50 55

30

(2) INFORMATION FOR SEQ ID NO: 191:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 311 amino acids

(B) TYPE: amino acid

35

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 191:

40

Met Arg Arg Leu Val His Asp Leu Leu Pro Pro Glu Val Cys Ser Leu
1 5 10 15

Leu Asn Pro Ala Ala Ile Tyr Ala Asn Asn Glu Ile Ser Leu Arg Asp
20 25 30

45

Val Glu Val Tyr Gly Phe Asp Tyr Asp Tyr Thr Leu Ala Gln Tyr Ala
35 40 45

Asp Ala Leu His Pro Glu Ile Phe Ser Thr Ala Arg Asp Ile Leu Ile
50 55 60

50

Glu His Tyr Lys Tyr Pro Glu Gly Ile Arg Lys Tyr Asp Tyr Asn Pro
65 70 75 80

Ser Phe Ala Ile Arg Gly Leu His Tyr Asp Ile Gln Lys Ser Leu Leu
85 90 95

55

Met Lys Ile Asp Ala Phe His Tyr Val Gln Leu Gly Thr Ala Tyr Arg
100 105 110

60

Gly Leu Gln Pro Val Pro Asp Glu Glu Val Ile Glu Leu Tyr Gly Gly
115 120 125

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 146 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 188:

Met Phe Leu Thr Arg Ile Leu Cys Pro Thr Tyr Ile Ala Leu Thr Phe
 1 5 10 15
 Leu Val Tyr Ile Val Ala Leu Val Ser Gly Gln Leu Cys Met Glu Ile
 20 25 30
 Ala Arg Gly Asn Ile Phe Phe Leu Asn Glu Leu Val Thr Thr Phe Cys
 15 35 40 45
 Cys Ser Cys Leu Leu Leu Ser Val Pro Tyr Leu His Pro Gly Phe Phe
 50 55 60
 Tyr Ser Ser Leu Cys Lys Cys Cys Phe Val Leu Val Val Leu Ser Arg
 20 65 70 75 80
 Ile Gly Ser Val Asn Glu Thr Trp Ser Cys Asn Phe Ser Ile Cys Ser
 25 85 90 95
 Tyr Leu Ile Phe Gly Ser Pro Ile Phe Thr Ala Val Ile Pro Lys Arg
 100 105 110
 Cys Ala Leu Glu Asp Ile Gln Asn Asn Pro Ile Gly Cys Leu Leu Arg
 30 115 120 125
 Cys Thr Pro Ala Trp Glu Thr Glu Gly Asp Ser Ile Ser Lys Lys Ile
 130 135 140
 Lys Lys
 35 145

40 (2) INFORMATION FOR SEQ ID NO: 189:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 84 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

45

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 189:

Met Gly Ser Arg Ala Glu Leu Cys Thr Leu Leu Gly Gly Phe Ser Phe
 1 5 10 15
 Leu Leu Leu Leu Ile Pro Gly Glu Gly Ala Lys Gly Gly Ser Leu Arg
 20 25 30
 Glu Ser Gln Gly Val Cys Ser Lys Gln Thr Leu Val Val Pro Leu His
 55 35 40 45
 Tyr Asn Glu Ser Tyr Ser Gln Pro Val Tyr Lys Pro Tyr Leu Thr Leu
 50 55 60
 Cys Ala Gly Ser Ala Ser Ala Ala Leu Thr Gly Pro Cys Thr Ala Leu
 60

312

1 5 10 15
 His Ile Leu Ala Met Glu Val Leu Ala Trp Leu Leu Ile Tyr Leu Leu
 20 25 30
 5 Gly Pro Gly Trp Val Pro Ser Ala Leu Xaa Arg Leu His Pro Gly His
 35 40 45
 10 Leu Ser Gly Ser Val Leu Val Ser Ala Ala Xaa
 50 55

15 (2) INFORMATION FOR SEQ ID NO: 187:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 189 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 187:

Met Asp Val Asn Ile Ala Pro Leu Arg Ala Trp Asp Asp Phe Phe Pro
 1 5 10 15
 25 Gly Ser Asp Arg Phe Ala Arg Pro Asp Phe Arg Asp Ile Ser Lys Trp
 20 25 30
 Asn Asn Arg Val Val Ser Asn Leu Leu Tyr Tyr Gln Thr Asn Tyr Leu
 35 40 45
 30 Val Val Ala Ala Met Met Ile Ser Ile Val Gly Phe Leu Ser Pro Phe
 50 55 60
 35 Asn Met Ile Leu Gly Gly Ile Val Val Val Leu Val Phe Thr Gly Phe
 65 70 75 80
 Val Trp Ala Ala His Asn Lys Asp Val Leu Arg Arg Met Lys Lys Arg
 85 90 95
 40 Tyr Pro Thr Thr Phe Val Met Val Val Met Leu Ala Ser Tyr Phe Leu
 100 105 110
 Ile Ser Met Phe Gly Gly Val Met Val Phe Val Phe Gly Ile Thr Phe
 115 120 125
 45 Pro Leu Leu Leu Met Phe Ile His Ala Ser Leu Arg Leu Arg Asn Leu
 130 135 140
 50 Lys Asn Lys Leu Glu Asn Lys Met Glu Gly Ile Gly Leu Lys Arg Thr
 145 150 155 160
 Pro Met Gly Ile Val Leu Asp Ala Leu Glu Gln Gln Glu Glu Gly Ile
 165 170 175
 55 Asn Arg Leu Thr Asp Tyr Ile Ser Lys Val Lys Glu Xaa
 180 185

60 (2) INFORMATION FOR SEQ ID NO: 188:

311

Asn Ile Glu Cys Leu Arg Asp Phe Leu Thr Pro Pro Leu Leu Ser Val
 20 25 30
 5 Arg Phe Arg Tyr Val Gly Ala Pro Gln Ala Leu Thr Leu Lys Leu Pro
 35 40 45
 Val Thr Xaa Asn Lys Phe Phe Gln Pro Thr Glu Met Ala Ala Gln Asp
 50 55 60
 10 Phe Phe Gln Arg Trp Lys Gln Leu Ser Leu Pro Gln Gln Glu Ala Gln
 65 70 75 80
 Lys Ile Phe Lys Ala Asn His Pro Met Asp Ala Glu Val Thr Lys Ala
 85 90 95
 15 Lys Leu Leu Gly Phe Gly Ser Ala Leu Leu Asp Asn Val Asp Pro Asn
 100 105 110
 Pro Glu Asn Phe Val Gly Ala Gly Ile Ile Gln Thr Lys Ala Leu Gln
 115 120 125
 20 Val Gly Cys Leu Leu Arg Leu Glu Pro Asn Ala Gln Ala Gln Met Tyr
 130 135 140
 25 Arg Leu Thr Leu Arg Thr Ser Lys Glu Pro Val Ser Arg His Leu Cys
 145 150 155 160
 Glu Leu Leu Ala Gln Gln Phe Xaa
 165
 30

(2) INFORMATION FOR SEQ ID NO: 185:

35 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 43 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 185:
 Met Phe Tyr Val Leu Ser Val Ser Pro Leu Leu Xaa Phe Leu Ala Cys
 1 5 10 15
 Gly Leu Cys Leu Cys Val Asn Trp Lys Ile Ala Ile Ser Gln Leu Ser
 45 20 25 30
 Leu Ser Phe Lys Asn Glu Leu Glu Lys Pro Xaa
 35 40

50

(2) INFORMATION FOR SEQ ID NO: 186:

55 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 59 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 186:
 60 Met Lys Leu Phe Asp Ala Ser Pro Thr Phe Phe Ala Phe Leu Leu Gly

(2) INFORMATION FOR SEQ ID NO: 182:

- 5 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 47 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 182:

10 Met Asp Ile Cys Phe Phe His Tyr Val Leu Leu Phe Phe Leu Val Arg
 1 5 10 15
 15 Cys Ala Leu Val Val Leu Ile Leu Leu Cys Gln Gly Trp Gly Asn Gly
 20 25 30
 Gly Gly Cys Val Gly Arg Val Leu Ile Ile Val Phe Ser Ser Val
 35 40 45

20

(2) INFORMATION FOR SEQ ID NO: 183:

- 25 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 93 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 183:

30 Met Ala Ser Leu Gly His Ile Leu Val Phe Cys Val Gly Leu Leu Thr
 1 5 10 15
 Met Ala Lys Ala Glu Ser Pro Lys Glu His Asp Pro Phe Thr Tyr Asp
 20 25 30
 35 Tyr Gln Ser Leu Gln Ile Gly Gly Leu Val Ile Ala Gly Ile Leu Phe
 35 40 45
 Ile Leu Gly Ile Leu Ile Val Leu Ser Arg Arg Cys Arg Cys Lys Phe
 40 50 55 60
 Asn Gln Gln Gln Arg Thr Gly Glu Pro Asp Glu Glu Gly Thr Phe
 65 70 75 80
 45 Arg Ser Ser Ile Arg Arg Leu Ser Thr Arg Arg Arg Xaa
 85 90

50 (2) INFORMATION FOR SEQ ID NO: 184:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 168 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 184:

Met Xaa Thr Lys Glu Phe Gly Xaa Gly Arg Ala Val Gln Gln Val Leu
 1 5 10 15
 60

309

Ala Ala Ala Leu Val Leu Ile Ser Ile Val Ala Phe Thr Thr Ala Thr
20 25 30

5 Lys Met Pro Ala Leu His Arg His Glu Glu Glu Lys Phe Phe Leu Asn
35 40 45

Ala Lys Gly Gln Lys Glu Thr Leu Pro Ser Ile Trp Asp Ser Pro Thr
50 55 60

10 Lys Gln Leu Ser Val Val Val Pro Ser Tyr Asn Glu Glu Lys Arg Leu
65 70 75 80

Pro Val Met Met Asp Glu Ala Leu Ser Tyr Leu Glu Lys Arg Gln Lys
85 90 95

15 Arg Asp Pro Ala Phe Thr Tyr Glu Val Ile Val Val Asp Asp Gly Ser
100 105 110

Lys Asp Gln Thr Ser Lys Val Ala Phe Lys Tyr Cys Gln Lys Tyr Gly
20 115 120 125

Ser Asp Lys Val Arg Val Ile Thr Leu Val Lys Asn Arg Gly Lys Gly
130 135 140

25 Gly Ala Ile Arg Met Gly Ile Phe Ser Ser Arg Gly Glu Lys Ile Leu
145 150 155 160

Met Ala Asp Ala Asp Gly Ala Thr Lys Phe Pro Asp Val Glu Lys Leu
165 170 175

30 Glu Lys Gly Leu Asn Asp Leu Gln Pro Trp Pro Asn Gln Met Ala Ile
180 185 190

Ala Cys Gly Ser Arg Ala His Leu Glu Lys Glu Ser Ile Ala Gln Arg
35 195 200 205

Ser Tyr Phe Arg Thr Leu Leu Met Tyr Gly Phe His Phe Leu Val Trp
210 215 220

40 Phe Leu Cys Val Lys Gly Ile Arg Asp Thr Gln Cys Gly Phe Lys Leu
225 230 235 240

Phe Thr Arg Glu Ala Ala Ser Arg Thr Phe Ser Ser Leu His Val Glu
245 250 255

45 Arg Trp Ala Phe Asp Val Glu Leu Leu Tyr Ile Ala Gln Phe Phe Lys
260 265 270

Ile Pro Ile Ala Glu Ile Ala Val Asn Trp Thr Glu Ile Glu Gly Ser
50 275 280 285

Lys Leu Val Pro Phe Trp Ser Trp Leu Gln Met Gly Lys Asp Leu Leu
290 295 300

55 Phe Ile Arg Leu Arg Tyr Leu Thr Gly Ala Trp Arg Leu Glu Gln Thr
305 310 315 320

Arg Lys Met Asn

60

308

20 25 30
 Glu Trp Lys Lys Leu Ile Met Val Gln His Trp Pro Glu Thr Val Cys
 35 40 45
 5 Glu Lys Ile Gln Asn Asp Cys Arg Asp Pro Pro Asp Tyr Trp Thr Ile
 50 55 60
 10 His Gly Leu Trp Pro Asp Lys Ser Glu Gly Cys Asn Arg Ser Trp Pro
 65 70 75 80
 Phe Asn Leu Glu Glu Ile Lys Asp Leu Leu Pro Glu Met Arg Ala Tyr
 85 90 95
 15 Trp Pro Asp Val Ile His Ser Phe Pro Asn Arg Ser Arg Phe Trp Lys
 100 105 110
 His Glu Trp Glu Lys His Gly Thr Cys Ala Ala Gln Val Asp Ala Leu
 115 120 125
 20 Asn Ser Gln Lys Lys Tyr Phe Gly Arg Ser Leu Glu Leu Tyr Arg Glu
 130 135 140
 Leu Asp Leu Asn Ser Val Leu Leu Lys Leu Gly Ile Lys Pro Ser Ile
 25 145 150 155 160
 Asn Tyr Tyr Gln Val Ala Asp Phe Lys Asp Ala Leu Ala Arg Val Tyr
 165 170 175
 30 Gly Val Ile Pro Lys Ile Gln Cys Leu Pro Pro Ser Gln Asp Glu Glu
 180 185 190
 Val Gln Thr Ile Gly Gln Ile Glu Leu Cys Leu Thr Lys Gln Asp Gln
 195 200 205
 35 Gln Leu Gln Asn Cys Thr Glu Pro Gly Glu Gln Pro Ser Pro Lys Gln
 210 215 220
 Glu Val Trp Leu Ala Asn Gly Ala Ala Glu Ser Arg Gly Leu Arg Val
 40 225 230 235 240
 Cys Glu Asp Gly Pro Val Phe Tyr Pro Pro Pro Lys Lys Thr Lys His
 245 250 255

45

50 (2) INFORMATION FOR SEQ ID NO: 181:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 324 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 181:

Met Ala Pro Leu Leu Leu Gln Leu Ala Val Leu Gly Ala Ala Leu Ala
 1 5 10 15

60

307

Gly His Glu Thr Met Lys Glu Val Leu Glu Gln Ala Gly Ala Trp Ile
 65 70 75 80
 5 Pro Leu Val Met Lys Gln Cys His Pro Asp Thr Lys Lys Phe Leu Cys
 85 90 95
 Ser Leu Phe Ala Pro Val Cys Leu Asp Asp Leu Asp Glu Thr Ile Gln
 100 105 110
 10 Pro Cys His Ser Leu Cys Val Gln Val Lys Asp Arg Cys Ala Pro Val
 115 120 125
 Met Ser Ala Phe Gly Phe Pro Trp Pro Asp Met Leu Glu Cys Asp Arg
 15 130 135 140
 Phe Pro Gln Asp Asn Asp Leu Cys Ile Pro Leu Ala Ser Ser Asp His
 145 150 155 160
 20 Leu Leu Pro Ala Thr Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys
 165 170 175
 Asn Lys Asn Asp Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn
 180 185 190
 25 Asp Phe Ala Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg
 195 200 205
 Asp Thr Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu
 30 210 215 220
 Asn Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys
 225 230 235 240
 35 Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala Pro
 245 250 255
 Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile Thr Ser
 260 265 270
 40 Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg Ile Ser Arg
 275 280 285
 Ser Ile Arg Lys Leu Gln Cys
 45 290 295

(2) INFORMATION FOR SEQ ID NO: 180:

50

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 256 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 180:

Met Arg Pro Ala Ala Leu Arg Gly Ala Leu Leu Gly Cys Leu Cys Leu
 1 5 10 15

60 Ala Leu Leu Cys Leu Gly Gly Ala Asp Lys Arg Leu Arg Asp Asn His

(2) INFORMATION FOR SEQ ID NO: 178:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 155 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 178:

10 Met Thr Arg Gly Gly Pro Gly Gly Arg Pro Gly Leu Pro Gln Pro Pro
1 5 10 15
Pro Leu Leu Leu Leu Leu Leu Leu Pro Leu Leu Leu Val Thr Ala Glu
20 25 30
15 Pro Pro Lys Pro Ala Gly Val Tyr Tyr Ala Thr Ala Tyr Trp Met Pro
35 40 45
Ala Glu Lys Thr Val Gln Val Lys Asn Val Met Asp Lys Asn Gly Asp
20 50 55 60
Ala Tyr Gly Phe Tyr Asn Asn Ser Val Lys Thr Thr Gly Trp Gly Ile
65 70 75 80
25 Leu Glu Ile Arg Ala Gly Tyr Gly Ser Gln Thr Leu Ser Asn Glu Ile
85 90 95
Ile Met Phe Val Ala Gly Phe Leu Glu Gly Tyr Leu Ile Ala Pro His
100 105 110
30 Met Asn Asp His Tyr Thr Asn Leu Tyr Pro Gln Leu Ile Thr Lys Pro
115 120 125
Ser Ile Met Asp Lys Val Gln Asp Phe Met Glu Lys Gln Asp Lys Val
35 130 135 140
Asp Pro Glu Lys Tyr Gln Arg Ile Gln Asp Xaa
145 150 155

40

(2) INFORMATION FOR SEQ ID NO: 179:

(i) SEQUENCE CHARACTERISTICS:

- 45 (A) LENGTH: 295 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 179:

50 Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser His
1 5 10 15
Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln Pro Asp
20 25 30
55 Phe Ser Tyr Lys Arg Xaa Asn Cys Lys Pro Ile Pro Val Asn Leu Gln
35 40 45
Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu Pro Asn Leu Leu
60 50 55 60

305

Phe Leu Ser Arg Gly Arg Glu Ala Glu Val Leu Val Ala Arg Gly Val
 85 90 95

5 Arg Val Lys Val Asn Glu Ala Tyr Arg Phe Arg Val Ala Leu Pro Ala
 100 105 110

Tyr Pro Ala Ser Leu Thr Asp Val Ser Pro Gly Ala Glu Arg Ala Ala
 115 120 125

10 Pro Gln Arg Leu Arg Tyr Leu Ser Leu Xaa
 130 135

15

(2) INFORMATION FOR SEQ ID NO: 177:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 179 amino acids

20

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 177:

25 Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp
 1 5 10 15

Leu Cys Cys Ala Thr Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr
 20 25 30

30 Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
 35 40 45

Gly Tyr Cys Lys Gly Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
 50 55 60

35 Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
 65 70 75 80

Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
 85 90 95

40 Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
 100 105 110

45 Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
 115 120 125

Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys Gln Trp
 130 135 140

50 Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr Cys Thr
 145 150 155 160

55 Thr Val Ala Asn His Phe Leu Gln Met Pro His Arg Leu His Arg Ala
 165 170 175

Glu Val Xaa

60

304

Tyr Asp Asn Pro His Met Val Pro Pro Asp Lys Cys Arg Cys Ala Val
 85 90 95
 5 Gly Ser Ile Leu Ser Glu Gly Glu Glu Ser Pro Ser Pro Glu Leu Ile
 100 105 110
 Asp Leu Tyr Gln Lys Phe Gly Phe Lys Val Phe Ser Phe Pro Glu Pro
 115 120 125
 10 Ser His Val Val Thr Ala Thr Phe Pro Leu Thr Pro Pro Phe Cys Pro
 130 135 140
 Ile Trp Leu Gly Tyr Pro Pro Cys Pro Ser Cys Leu Gly His Leu His
 145 150 155 160
 15 Gln Gly Ala Glu Ala Val Cys Leu Ser Ser Ala Gly Asp Leu Pro Gly
 165 170 175
 Arg Pro Glu Ser Ile Ser Cys Ala His Trp His Gly Gln Gly Asp Phe
 180 185 190
 20 Tyr Val Pro Glu Met Lys Glu Thr Glu Trp Lys Trp Arg Gly Leu Val
 195 200 205
 25 Glu Ala Ile Asp Thr Gln Val Asp Gly Thr Gly Ala Asp Thr Met Ser
 210 215 220
 Asp Thr Ser Ser Val Ser Leu Glu Val Ser Pro Gly Ser Arg Glu Thr
 225 230 235 240
 30 Ser Ala Ala Thr Leu Ser Pro Gly Ala Ser Ser Arg Gly Trp Asp Asp
 245 250 255
 35 Gly Asp Thr Arg Ser Glu His Ser Xaa
 260 265

(2) INFORMATION FOR SEQ ID NO: 176:

40

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 138 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

45

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 176:

Met Ala Gln Leu Phe Leu Pro Leu Leu Ala Ala Leu Val Leu Ala Gln
 1 5 10 15
 50 Ala Pro Ala Ala Leu Ala Asp Val Leu Glu Gly Asp Ser Ser Glu Asp
 20 25 30
 Arg Ala Phe Arg Val Arg Ile Ala Gly Asp Ala Pro Leu Gln Gly Val
 35 40 45
 55 Leu Gly Gly Ala Leu Thr Ile Pro Cys His Val His Tyr Leu Arg Pro
 50 55 60
 60 Pro Pro Ser Arg Arg Ala Val Leu Gly Ser Pro Arg Val Lys Trp Thr
 65 70 75 80

303

	20	25	30
	Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser		
	35	40	45
5	Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn		
	50	55	60
	Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys		
10	65	70	75 80
	Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro		
	85	90	95
15	Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu		
	100	105	110
	Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val		
20	115	120	125
	Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser		
	130	135	140
25	Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg		
	145	150	155 160
	Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln		
	165	170	175
30	Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Cys Gln Pro Val		
	180	185	190
	Gln Cys Ala Xaa		
	195		

35

(2) INFORMATION FOR SEQ ID NO: 175:

40

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 265 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 175:

45

Met Ser Asp Leu Leu Leu Leu Gly Leu Ile Gly Gly Leu Thr Leu Leu
1 5 10 15

50

Leu Leu Leu Thr Leu Leu Ala Phe Ala Gly Tyr Ser Gly Leu Leu Ala
20 25 30

Gly Val Glu Val Ser Ala Gly Ser Pro Pro Ile Arg Asn Val Thr Val
35 40 45

55

Ala Tyr Lys Phe His Met Gly Leu Tyr Gly Glu Thr Gly Arg Leu Phe
50 55 60

Thr Glu Ser Cys Ser Ile Ser Pro Lys Leu Arg Ser Ile Ala Val Tyr
65 70 75 80

60

302

Gln Ser Ala Phe Gln Val Ala Val Ala Ala Asn Gln His Leu Ile Val
 100 105 110
 5 Gln Asp Leu Val Asn Ile Gly Ala Gln Val Asn Thr Thr Asp Cys Trp
 115 120 125
 Gly Arg Thr Pro Leu His Val Cys Ala Glu Lys Gly His Ser Gln Val
 130 135 140
 10 Leu Gln Ala Ile Gln Lys Gly Ala Val Gly Ser Asn Gln Phe Val Asp
 145 150 155 160
 Leu Glu Ala Thr Asn Tyr Asp Gly Leu Thr Pro Leu His Cys Ala Val
 165 170 175
 15 Ile Ala His Asn Ala Val Val His Glu Leu Gln Arg Asn Gln Gln Pro
 180 185 190
 20 His Ser Pro Glu Val Gln Glu Leu Leu Leu Lys Asn Lys Ser Leu Val
 195 200 205
 Asp Thr Ile Lys Cys Leu Ile Gln Met Gly Ala Ala Val Glu Ala Lys
 210 215 220
 25 Asp Arg Lys Ser Gly Arg Thr Ala Leu His Leu Ala Ala Glu Glu Ala
 225 230 235 240
 Asn Leu Glu Leu Ile Arg Leu Phe Leu Glu Leu Pro Ser Cys Leu Ser
 245 250 255
 30 Phe Val Asn Ala Lys Ala Tyr Asn Gly Asn Thr Ala Leu His Val Ala
 260 265 270
 35 Ala Ser Leu Gln Tyr Arg Leu Thr Gln Leu Asp Ala Val Arg Leu Leu
 275 280 285
 Met Arg Lys Gly Ala Asp Pro Ser Thr Arg Asn Leu Glu Asn Glu Gln
 290 295 300
 40 Pro Val His Leu Val Pro Asp Gly Pro Val Gly Glu Gln Ile Arg Arg
 305 310 315 320
 Ile Leu Lys Gly Lys Ser Ile Gln Gln Arg Ala Pro Pro Tyr
 325 330
 45

(2) INFORMATION FOR SEQ ID NO: 174:

50

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 196 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 174:

Met Asp Ala Arg Trp Trp Ala Val Val Leu Ala Ala Phe Pro Ser
 1 5 10 15

60 Leu Gly Ala Gly Gly Glu Thr Pro Glu Ala Pro Pro Glu Ser Trp Thr

35 40 45
 Leu Leu Ser Phe Leu Gly Arg Gln Leu Glu Ala Pro Leu Pro Pro Met
 50 55 60
 5 Val
 65
 10
 (2) INFORMATION FOR SEQ ID NO: 172:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 75 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 172:
 20 Met Tyr Lys Gly Lys Leu Val Ile Val Leu Ile Leu Leu Leu Pro
 1 5 10 15
 Ser His Phe Met Phe Leu Thr Gln Cys Lys Glu Ile Lys His Asn Leu
 20 25 30
 25 Lys Lys Asn Met Ser Leu Leu Leu Phe Thr Ile Lys Ser Trp Leu Tyr
 35 40 45
 Ser Ala Ser Leu Gly Ile Leu Tyr Asn Trp Gln His Leu Thr Ala Gln
 50 55 60
 30 Val Asp Gln Cys Thr Ser Leu Ile Leu Ile His
 65 70 75
 35
 (2) INFORMATION FOR SEQ ID NO: 173:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 334 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 173:
 45 Met Val Gly His Glu Met Ala Ser Xaa Ser Ser Asn Thr Ser Leu Pro
 1 5 10 15
 Phe Ser Asn Met Gly Asn Pro Met Asn Thr Thr Gln Leu Gly Lys Ser
 20 25 30
 50 Leu Phe Gln Trp Gln Val Glu Gln Glu Glu Ser Lys Leu Ala Asn Ile
 35 40 45
 Ser Gln Asp Gln Phe Leu Ser Lys Asp Ala Asp Gly Asp Thr Phe Leu
 50 55 60
 55 His Ile Ala Val Ala Gln Gly Arg Arg Ala Leu Ser Tyr Val Leu Ala
 65 70 75 80
 Arg Lys Met Asn Ala Leu His Met Leu Asp Ile Lys Glu His Asn Gly
 85 90 95
 60

300

Asp Ile Gly Asp His Gln Pro Phe Ala Asn Ala His Asp Val Leu Ala
 145 150 155 160

5 Arg Ser Arg Ser Arg Ala Asn Val Leu Asn Lys Val Glu Tyr Gly Thr
 165 170 175

Ala Ala Leu Glu Ala Ser Ser Pro Arg Ala Ala Lys Ser Leu Ser Leu
 180 185 190

10 Thr Gly Met Leu Ser Ser Ala Asn Trp Gly Ile Glu Phe Lys Val Thr
 195 200 205

Arg Lys Lys Gln Ala Asp Asn Trp Lys Gly Thr Asp Trp Val Leu Leu
 210 215 220

15 Gly Phe Ile Leu Ile Pro Cys Xaa
 225 230

20 (2) INFORMATION FOR SEQ ID NO: 170:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 72 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 170:

30 Met Ser Ala Ile Phe Asn Phe Gln Ser Leu Leu Thr Val Ile Leu Leu
 1 5 10 15

Leu Ile Cys Thr Cys Ala Tyr Ile Arg Ser Leu Ala Pro Ser Leu Leu
 20 25 30

35 Asp Arg Asn Lys Thr Gly Leu Leu Gly Ile Phe Trp Lys Cys Ala Arg
 35 40 45

Ile Gly Glu Arg Lys Ser Pro Tyr Val Ala Val Cys Cys Ile Val Met
 50 55 60

40 Ala Phe Ser Ile Leu Phe Ile Gln
 65 70

45 (2) INFORMATION FOR SEQ ID NO: 171:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 65 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 171:

55 Met Gly Thr Phe Ser Leu Ser Leu Phe Gly Leu Met Gly Val Ala Phe
 1 5 10 15

Gly Met Asn Leu Glu Ser Ser Leu Glu Glu Asp His Arg Ile Phe Trp
 20 25 30

60 Leu Ile Thr Gly Ile Met Phe Met Gly Ser Gly Leu Ile Trp Arg Arg

(2) INFORMATION FOR SEQ ID NO: 168:

5

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 58 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

10

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 168:

Met Gly Trp Ser Ala Gly Leu Leu Phe Leu Leu Ile Leu Tyr Leu Pro
 1 5 10 15

Val Pro Gly Trp Met Glu Arg Glu Asp Gly Glu Thr Gly His Leu Ser
 20 25 30

Pro Gln Ala Pro Gly Arg Glu Tyr Arg Gly Phe Tyr Ser Val Pro Pro
 35 40 45

Asp Tyr Val Trp Leu Arg Asp Ser Pro Xaa
 50 55

25

(2) INFORMATION FOR SEQ ID NO: 169:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 232 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 169:

Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu Ser
 35 1 5 10 15

Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Ala His Cys Gln Thr
 20 25 30

Pro Pro Arg Ile Ser Arg Met Ser Asp Val Asn Val Ser Ala Leu Pro
 35 40 45

Ile Lys Lys Asn Ser Gly His Ile Tyr Asn Lys Asn Ile Ser Gln Lys
 50 55 60

Asp Cys Asp Cys Leu His Val Val Glu Pro Met Pro Val Arg Gly Pro
 65 70 75 80

Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu Cys Lys Tyr Glu Glu Arg
 85 90 95

Ser Ser Val Thr Ile Lys Val Thr Ile Ile Ile Tyr Leu Ser Ile Leu
 100 105 110

Gly Leu Leu Leu Tyr Met Val Tyr Leu Thr Leu Val Glu Pro Ile
 115 120 125

Leu Lys Arg Arg Leu Phe Gly His Ala Gln Leu Ile Gln Ser Asp Asp
 130 135 140

60

298

85

90

95

Gly Leu Leu Ile Leu Ser Cys Xaa
100

5

(2) INFORMATION FOR SEQ ID NO: 166:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 81 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 166:

15

Met Ala Gly Thr Met Val Ile Val Val Val Val Val Val Gly Glu Val
1 5 10 15

20

Val Val Glu Ala Glu Val Val Val Gln Ala Arg Glu Glu Ala Gly Glu
20 25 30

Glu Glu Gly Ala Arg Ile Ile Thr Lys Gly Val Asn Leu Asn Ser Ile
35 40 45

25

Ser Ser Met Glu Val Ile Ser Ile Ile Ile Leu Asp Leu Asp Arg Glu
50 55 60

Asp Ile Thr Leu Val Glu Ala Thr Glu Pro Tyr Ile Leu Leu Glu Leu
65 70 75 80

30

Lys

35

(2) INFORMATION FOR SEQ ID NO: 167:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 93 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 167:

40

Met Ser Phe Ser Phe Ile Ile Phe Leu Leu Leu Val Cys Gln Glu Ile
1 5 10 15

Thr Phe Cys Met Ser Tyr Gly Asp Ala Val Asn Cys Phe Ser Glu Cys
20 25 30

50

Phe Ser Asn Leu Gln Thr Ile Tyr Ile Ser Cys Leu Gln His Ala Val
35 40 45

Cys Lys His Ser Val Ile Trp Ser Ile Gln Leu Phe Val Arg Ala Leu
50 55 60

55

Pro Ile Ser Lys Cys Ala Glu Leu Ser Ile Asp Gly Ile Phe Arg Ser
65 70 75 80

60

Phe His Glu Asn Trp Lys Cys Ser Trp Val Ala Pro Thr
85 90

297

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 164:

5 Met Gly Phe Gly Ala Thr Leu Ala Val Gly Leu Thr Ile Phe Val Leu
 1 5 10 15
 Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys Ser Cys Cys Cys Leu
 20 25 30
 10 Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
 35 40 45
 Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
 15 50 55 60
 Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
 65 70 75 80
 20 Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr
 85 90 95
 Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly
 100 105 110
 25 Glu Gln Pro Arg Pro Thr Pro Pro Ala Ser Leu Leu Thr Thr Arg Pro
 115 120 125
 Thr Trp Met Pro Arg Arg Arg Pro Ser Glu His Ser Leu Ala Ser Leu
 30 130 135 140
 Ala Ala Thr Trp Leu Cys Cys Val Cys Ala Xaa
 145 150 155

35

(2) INFORMATION FOR SEQ ID NO: 165:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 104 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 165:

45 Met Ile Ile Leu Val Phe Ile Ala Phe Phe Ile Pro Leu Gln Lys Thr
 1 5 10 15
 Ile Gly Lys Ile Ala Thr Cys Leu Glu Leu Arg Ser Ala Ala Leu Gln
 20 25 30
 50 Ser Thr Gln Ser Gln Glu Glu Phe Lys Leu Glu Asp Leu Lys Lys Leu
 35 40 45
 Glu Pro Ile Leu Lys Asn Ile Leu Thr Tyr Asn Lys Glu Phe Pro Phe
 55 50 55 60
 Asp Val Gln Pro Val Pro Leu Arg Arg Ile Leu Ala Pro Gly Glu Glu
 65 70 75 80
 60 Glu Asn Leu Glu Phe Glu Glu Asp Glu Glu Glu Gly Gly Ala Gly Ala

Asp Xaa

5

(2) INFORMATION FOR SEQ ID NO: 162:

(i) SEQUENCE CHARACTERISTICS:

10

(A) LENGTH: 72 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 162:

15 Met Glu Ala Val Phe Thr Val Phe Phe Phe Val Val Val Leu Phe Leu
1 5 10 15

Lys Asn Thr Glu Gly Ala Lys Leu Phe Cys Thr Leu Tyr Pro Ala Ala
20 25 30

20

Ser Ser Gly Gln Ser Gln Gly Pro Gly Leu Glu Lys Pro Asp Ser Gln
35 40 45

25

Glu Cys Ile Ile Asp Pro Cys Ser Tyr Pro Ile Ala Leu Gly Ala Gly
50 55 60

Thr Glu Pro Gly Cys Lys Ile Xaa
65 70

30

(2) INFORMATION FOR SEQ ID NO: 163:

(i) SEQUENCE CHARACTERISTICS:

35

(A) LENGTH: 67 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 163:

40 Met Trp Phe Tyr Phe Leu Ser Val Ser Phe Pro Leu Leu Pro Val Xaa
1 5 10 15

Ala Pro Xaa Pro Pro Pro Ala Pro Thr Thr Leu Cys Leu Leu Leu Phe
20 25 30

45

Leu Gly Xaa Leu Tyr Asn Ser Thr Cys Ile His Cys Val His Thr Thr
35 40 45

50

Ser Xaa Thr Gln Asn Pro Thr Ala Asn Thr Leu Lys Lys Lys Lys Lys
50 55 60

Asn Trp Gly
65

55

(2) INFORMATION FOR SEQ ID NO: 164:

(i) SEQUENCE CHARACTERISTICS:

60

(A) LENGTH: 155 amino acids

295

Glu Pro Ala Ser Pro Pro Glu Thr Thr Thr Thr Ala Gln Glu Thr Ser
 50 55 60

5 Ala Ala Ala Val Gln Gly Thr Ala Lys Val Thr Ser Ser Arg Gln Glu
 65 70 75 80

Leu Asn Pro Leu Lys Ser Ile Val Glu Lys Ser Ile Leu Leu Thr Glu
 85 90 95

10 Gln Ala Leu Ala Lys Ala Gly Lys Gly Met His Gly Gly Val Pro Gly
 100 105 110

Gly Lys Gln Phe Ile Glu Asn Gly Ser Glu Phe Ala Gln Lys Leu Leu
 115 120 125

15 Lys Lys Phe Ser Leu Leu Lys Pro Trp Ala Xaa
 130 135

20 (2) INFORMATION FOR SEQ ID NO: 161:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 178 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 161:

30 Met Leu Gly Cys Gly Ile Pro Ala Leu Gly Leu Leu Leu Leu Gln
 1 5 10 15

Gly Ser Ala Asp Gly Asn Gly Ile Gln Gly Phe Phe Tyr Pro Trp Ser
 20 25 30

35 Cys Glu Gly Asp Ile Trp Asp Arg Glu Ser Cys Gly Gly Gln Ala Ala
 35 40 45

Ile Asp Ser Pro Asn Leu Cys Leu Arg Leu Arg Cys Cys Tyr Arg Asn
 50 55 60

40 Gly Val Cys Tyr His Gln Arg Pro Asp Glu Asn Val Arg Arg Lys His
 65 70 75 80

Met Trp Ala Leu Val Trp Thr Cys Ser Gly Leu Leu Leu Leu Ser Cys
 85 90 95

Ser Ile Cys Leu Phe Trp Trp Ala Lys Arg Arg Asp Val Leu His Met
 100 105 110

50 Pro Gly Phe Leu Ala Gly Pro Cys Asp Met Ser Lys Ser Val Ser Leu
 115 120 125

Leu Ser Lys His Arg Gly Thr Lys Lys Thr Pro Ser Thr Gly Ser Val
 130 135 140

55 Pro Val Ala Leu Ser Lys Glu Ser Arg Asp Val Glu Gly Gly Thr Glu
 145 150 155 160

60 Gly Glu Gly Thr Glu Glu Gly Glu Glu Thr Glu Gly Glu Glu Glu
 165 170 175

294

Leu Leu Ala Pro Ile Leu Pro Asp Glu Gln Ser Glu Val Phe Glu Ala
 20 25 30

5 Leu Ser Asn Leu Pro Lys Val Thr Trp Leu Gly Ser Asn Ser Pro Ser
 35 40 45

Ser Glu Met Pro Glu Pro Gly Arg Phe Val Ile Val His His Gln Leu
 50 55 60

10 Ser Ala Ala Ser His Ser Ser Ser Gln Leu Ala
 65 70 75

15

(2) INFORMATION FOR SEQ ID NO: 159:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 81 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 159:

20

Met Trp Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu Pro Ala Ala Pro
 1 5 10 15

Val Pro Thr Ala Lys Ala Ala Pro His Pro Asp Ala Asn Thr Gln Glu
 20 25 30

30 Gly Leu Gln Asn Leu Leu Gln Gly Val Gly Ala Gly Gly Asp Gly Glu
 35 40 45

Leu Arg Ala Asp Ser His Leu Ala Pro Gly Ser Gly Cys Ile Asp Gly
 50 55 60

35 Ala Val Val Ala Thr Arg Pro Glu Ser Arg Gly Gly Arg Pro Ala Val
 65 70 75 80

40 Pro

45 (2) INFORMATION FOR SEQ ID NO: 160:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 139 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 160:

50

Met Lys Phe Thr Thr Leu Leu Phe Leu Ala Ala Val Ala Gly Ala Leu
 1 5 10 15

55 Val Tyr Ala Glu Asp Ala Ser Ser Asp Ser Thr Gly Ala Asp Pro Ala
 20 25 30

Gln Glu Ala Gly Thr Ser Lys Pro Asn Glu Glu Ile Ser Gly Pro Ala
 35 40 45

60

Trp Ala Lys Lys Thr Lys Trp Met Asn Met Lys Ala Val Phe Gly His
 65 70 75 80

5 Pro Phe Ser Leu Gly Trp Ala Ser Pro Phe Ala Thr Pro Asp Gln Gly
 85 90 95

Lys Ala Asp Pro Tyr Gln Tyr Val Val Xaa
 100 105

10

(2) INFORMATION FOR SEQ ID NO: 156:

15 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 156:

20 Met Tyr Thr Asn His Phe Asn Leu Tyr Leu Lys Tyr Ile Leu Leu Ile
 1 5 10 15

25 Ile Leu Ile Leu Asn Met Thr Asn Ser Ser Ser Arg Tyr
 20 25

(2) INFORMATION FOR SEQ ID NO: 157:

30 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 53 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 157:

Met Asn Glu Leu Leu Leu Phe Phe Phe Phe Phe Phe Phe Thr Phe
 1 5 10 15

40 Cys Ile Glu Thr Asn Ser Phe Lys Gln Thr Tyr Tyr Tyr Tyr Phe Leu
 20 25 30

Gln Asn Ile Tyr Met Glu Met Leu Pro Pro Pro Val Asn Pro Pro Val
 35 40 45

45 Pro Pro Trp Gly Xaa
 50

50 (2) INFORMATION FOR SEQ ID NO: 158:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 75 amino acids
 55 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 158:

Met Tyr Ala Val Tyr Gln Gln Leu Ala Gln Leu Thr Leu Met Val Thr
 1 5 10 15

60

(A) LENGTH: 42 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 153:

5

Met Leu Leu Asn Gln His Phe Lys Ile Phe Gly Ser Leu Ile His Met
 1 5 10 15

10

Asn Leu Leu Phe Ala Leu Ile Ser Leu Gly Ser Ser Asn Leu Ser Gly
 20 25 30

Val Gln Phe Cys Cys Glu Thr Val Gln Xaa
 35 40

15

(2) INFORMATION FOR SEQ ID NO: 154:

(i) SEQUENCE CHARACTERISTICS:

20

(A) LENGTH: 72 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 154:

25

Met Leu Ser Leu Ser Phe Leu Leu Arg Arg Val Leu Phe Leu Gly Phe
 1 5 10 15

Leu Gln Ala Ser Val Gly Glu Lys Lys Ser Leu Arg Xaa Leu Asn Tyr
 20 25 30

30

Ser Val Pro His Pro Met Leu Xaa His Pro Pro Pro Asp Thr Ala Gln
 35 40 45

35

Val Pro Pro Arg Leu Glu Arg Ser Leu Leu Gln Gln Glu Leu Trp Thr
 50 55 60

Pro Gly Pro His His Ser Asn Ile
 65 70

40

(2) INFORMATION FOR SEQ ID NO: 155:

(i) SEQUENCE CHARACTERISTICS:

45

(A) LENGTH: 106 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 155:

50

Met Gln Pro Leu Asn Phe Ser Ser Thr Glu Cys Ser Ser Phe Ser Pro
 1 5 10 15

Pro Thr Thr Val Ile Leu Leu Ile Leu Leu Cys Phe Glu Gly Leu Leu
 20 25 30

55

Phe Leu Ile Phe Thr Ser Val Met Phe Gly Thr Gln Val His Ser Ile
 35 40 45

60

Cys Thr Asp Glu Thr Gly Ile Glu Gln Leu Lys Lys Glu Glu Arg Arg
 50 55 60

.291

85 90 95

Leu Phe Arg Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val
100 105 110

5 Pro Val Leu Gly Ser Leu Leu Asn Leu Pro Gly Ile Arg Ser Phe Val
115 120 125

10 Asp Lys Val Gly Glu Ser Asn Asn Met Val Xaa
130 135

15 (2) INFORMATION FOR SEQ ID NO: 151:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 58 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 151:

Met Ser Ala Pro Gln Thr Arg Ile Ser Arg Ala Leu Val Leu Leu Phe
1 5 10 15

25 Leu Ala Pro Thr Leu Leu Ser Leu Gly His Gly Ile His Pro Ile Asn
20 25 30

Thr Ala Thr Pro Tyr Xaa Thr Asp Gln Ala Lys Leu Ala Pro Gly Thr
35 40 45

30 Lys Glu Leu Asn His Asp Gln Ser Val Thr
50 55

35

(2) INFORMATION FOR SEQ ID NO: 152:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 48 amino acids

40 (B) TYPE: amino acid

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 152:

Met Ile Arg Lys Leu His Lys Ile Ile Val Phe Ser Pro Arg Val Ile
45 1 5 10 15

Val Leu Leu Asn Cys Phe Phe Phe Ile Lys Ala Lys Phe Val Leu Tyr
20 25 30

50 Ile Phe Val Phe His Val Leu Asp Gly Ser Ile Ser Tyr Pro Val Xaa
35 40 45

55

(2) INFORMATION FOR SEQ ID NO: 153:

60

(i) SEQUENCE CHARACTERISTICS:

290

Met Glu Pro Leu Arg Leu Leu Ile Leu Leu Phe Val Thr Glu Leu Ser
 1 5 10 15

5 Gly Ala His Asn Thr Thr Val Phe Gln Gly Val Ala Gly Gln Ser Leu
 20 25 30

Gln Val Ser Cys Pro Tyr Asp Ser Met Lys His Trp Gly Arg Arg Lys
 35 40 45

10 Ala Trp Cys Arg Gln Leu Gly Glu Lys Gly Pro Cys Gln Arg Val Val
 50 55 60

Ser Thr His Asn Leu Trp Leu Leu Ser Phe Leu Arg Arg Trp Asn Gly
 15 65 70 75 80

Ser Thr Ala Ile Thr Asp Asp Thr Leu Gly Gly Thr Leu Thr Ile Thr
 85 90 95

20 Leu Arg Asn Leu Gln Pro His Asp Ala Gly Leu Tyr Gln Cys Gln Ser
 100 105 110

Leu His Gly Ser Glu Ala Asp Thr Leu Arg Lys Val Leu Val Glu Val
 115 120 125

25 Leu Ala Asp Pro Leu Asp His Arg Asp Ala Gly Asp Leu Trp Phe Pro
 130 135 140

Gly Glu Ser Glu Ser Phe Glu Asp Ala His Val Glu His Ser Ile Ser
 145 150 155 160

Arg Ser Ser Ser Xaa
 165

35

(2) INFORMATION FOR SEQ ID NO: 150:

- (i) SEQUENCE CHARACTERISTICS:
- 40 (A) LENGTH: 139 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 150:

45 Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr Gly
 1 5 10 15

Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys
 20 25 30

50 Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe
 35 40 45

Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys
 55 50 55 60

Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile
 65 70 75 80

60 Gly Trp Pro Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu

289

20 25 30

Ala Pro Arg Ala Arg Phe Pro Pro Arg Pro Leu Pro Arg Pro His Pro
35 40 45

5 Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser Gly
50 55 60

Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Thr Trp Thr Ala Ala
10 65 70 75 80

Met Ala Ala Met Arg Arg Ser Ala Gly Leu Ser His Val Pro Arg Lys
85 90 95

15 Gly Asn Ala His Arg Pro Leu Ala Ser Pro Ala Pro Ala Pro Ala Ser
100 105 110

Val Thr Ala Leu Gly Glu Leu Thr Arg Asn Cys Ala Thr Ala Ala Ala
115 120 125

20 Trp Pro Ala Xaa
130

25

(2) INFORMATION FOR SEQ ID NO: 148:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 92 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 148:

35 Met Glu Ala Thr Leu Glu Gln His Leu Glu Asp Thr Met Lys Asn Pro
1 5 10 15

Ser Ile Val Gly Val Leu Cys Thr Asp Ser Gln Gly Leu Asn Leu Gly
20 25 30

40 Cys Arg Gly Thr Leu Ser Asp Glu His Ala Gly Val Ile Ser Val Leu
35 40 45

Ala Gln Gln Ala Ala Lys Leu Thr Ser Asp Pro Thr Asp Ile Pro Val
50 55 60

45 Val Cys Leu Glu Ser Asp Asn Gly Asn Ile Met Ile Gln Lys His Asp
65 70 75 80

Gly Ile Thr Val Ala Val His Lys Met Ala Ser Xaa
85 90

50

55

(2) INFORMATION FOR SEQ ID NO: 149:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 165 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

60

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 149:

288

Asn Leu Glu Asn Leu Glu Glu Lys Glu Tyr Phe Gly Ile Val Ser Val
 100 105 110
 5 Arg Ile Leu Val His Glu Trp Pro Met Thr Ser Gly Ser Ser Leu Gln
 115 120 125
 Leu Ile Val Ile Gln Glu Glu Val Val Glu Ile Asp Gly Lys Gln Val
 130 135 140
 10 Gln Gln Lys Asp Val Thr Glu Ile Asp Ile Leu Val Lys Asn Arg Gly
 145 150 155 160
 Val Leu Arg His Ser Asn Tyr Thr Leu Pro Leu Glu Glu Ser Met Leu
 165 170 175
 15 Tyr Ser Ile Ser Arg Asp Ser Asp Ile Leu Phe Thr Leu Pro Asn Leu
 180 185 190
 Ser Lys Lys Glu Ser Val Ser Ser Leu Gln Thr Thr Ser Gln Tyr Leu
 195 200 205
 Ile Arg Asn Val Glu Thr Thr Val Asp Glu Asp Val Leu Pro Gly Gln
 210 215 220
 25 Val Thr
 225

30 (2) INFORMATION FOR SEQ ID NO: 146:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 45 amino acids
 (B) TYPE: amino acid
 35 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 146:

Met Gly Met Gly Ala Phe Gln Ala Phe Phe Trp Val Ile Leu Thr Val
 1 5 10 15
 40 Ser Asn Val Cys Val Leu Phe Lys Met Ser Leu Phe Phe Leu Leu Thr
 20 25 30
 Leu Ile Ser Lys Leu His Gly Asp Ala Glu Val Cys Xaa
 35 40 45
 45

50 (2) INFORMATION FOR SEQ ID NO: 147:
 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 132 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 147:

Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
 1 5 10 15
 60 Leu Gly Leu Ala Leu Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu

287

325 330 335
 Leu Ile Leu Ser Leu Asp Tyr Asn Leu His Gly Ala Phe Gln Gln Leu
 340 345 350
 5 Gln Leu Leu Gly Arg Phe Cys Gln Glu Gln Gly Ile Pro Phe Pro Pro
 355 360 365
 10 Ile Ser Pro Ser Pro Glu Glu Gln Leu Gln Pro Arg Glu Cys His Thr
 370 375 380
 Phe Ser Asp Pro Thr Cys Pro Gly Ala Pro Ala Val Leu His Phe Pro
 385 390 395 400
 15 Leu Val Ser Asp Ser Phe Arg Glu Tyr Ser Ala Pro Gly Val Arg Arg
 405 410 415
 Thr Pro Glu Glu Ala Ala Ala Gly Glu Val Asn Leu Ser Ser Ser Asp
 420 425 430
 20 Ser Pro Tyr His Tyr Thr Lys Val Thr Tyr Ser Gln Glu Asp Val Asp
 435 440 445
 25 Lys Leu Leu His Leu Thr His Tyr Asn Val Cys Asn Asn Gln Glu Gln
 450 455 460
 Leu Leu Glu Ala Leu Arg Gln Ala Val Gln Arg Arg Arg Gln Arg Arg
 465 470 475 480
 30 Pro His Xaa

35 (2) INFORMATION FOR SEQ ID NO: 145:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 226 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

40

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 145:

Met Glu Gly Ala Pro Pro Gly Ser Leu Ala Leu Arg Leu Leu Leu Phe
 1 5 10 15
 45 Val Ala Leu Pro Ala Ser Gly Trp Leu Thr Thr Gly Ala Pro Glu Pro
 20 25 30
 Pro Pro Leu Ser Gly Ala Pro Gln Asp Gly Ile Arg Ile Asn Val Thr
 50 35 40 45
 Thr Leu Lys Asp Asp Gly Asp Ile Ser Lys Gln Gln Val Val Leu Asn
 50 55 60
 55 Ile Thr Tyr Glu Ser Gly Gln Val Tyr Val Asn Asp Leu Pro Val Asn
 65 70 75 80
 Ser Gly Val Thr Arg Ile Ser Cys Gln Thr Leu Ile Val Lys Asn Glu
 85 90 95
 60

286

	1	5	10	15
	Leu Ala Gly	Leu Lys Glu	Leu Gly Leu Leu Asp Cys Xaa	Ser Tyr Ile
		20	25	30
5	Thr Gly Ala	Ser Gly Ser Thr Trp	Ala Leu Ala Asn Leu	Tyr Lys Asp
	35		40	45
	Pro Glu Trp	Ser Gln Lys Asp	Leu Ala Gly Pro Thr	Glu Leu Leu Lys
10	50	55	60	
	Thr Gln Val	Thr Lys Asn Lys	Leu Gly Val Leu Ala	Pro Ser Gln Leu
	65	70	75	80
15	Gln Arg Tyr	Arg Gln Glu	Leu Ala Glu Arg Ala	Arg Leu Gly Tyr Pro
		85	90	95
	Ser Cys Phe	Thr Asn Leu Trp	Ala Leu Ile Asn Glu	Ala Leu Leu His
20		100	105	110
	Asp Glu Pro	His Asp His Lys	Leu Ser Asp Gln Arg	Glu Ala Leu Ser
	115		120	125
	His Gly Gln	Asn Pro Leu Pro	Ile Tyr Cys Ala	Leu Asn Thr Lys Gly
25	130	135	140	
	Gln Ser Leu	Thr Thr Phe Glu	Phe Gly Glu Trp Cys	Glu Phe Ser Pro
	145	150	155	160
30	Tyr Glu Val	Gly Phe Pro Lys	Tyr Gly Ala Phe Ile	Pro Ser Glu Leu
		165	170	175
	Phe Gly Ser	Glu Phe Phe Met	Gly Gln Leu Met Lys	Arg Leu Pro Glu
35		180	185	190
	Ser Arg Ile	Cys Phe Leu Glu	Gly Ile Trp Ser Asn	Leu Tyr Ala Ala
	195		200	205
	Asn Leu Gln	Asp Ser Leu Tyr	Trp Ala Ser Glu	Pro Ser Gln Phe Trp
40	210	215	220	
	Asp Arg Trp	Val Arg Asn Gln	Ala Asn Leu Asp	Lys Glu Gln Val Pro
	225	230	235	240
45	Leu Leu Lys	Ile Glu Glu Pro	Pro Ser Thr Ala	Gly Arg Ile Ala Glu
		245	250	255
	Phe Phe Thr	Asp Leu Leu Thr	Trp Arg Pro Leu	Ala Gln Ala Thr His
50		260	265	270
	Asn Phe Leu	Arg Gly Leu His	Phe His Lys Asp	Tyr Phe Gln His Pro
	275		280	285
	His Phe Ser	Thr Trp Lys Ala	Thr Thr Leu Asp	Gly Leu Pro Asn Gln
55	290	295	300	
	Leu Thr Pro	Ser Glu Pro His	Leu Cys Leu Leu	Asp Val Gly Tyr Leu
	305	310	315	320
60	Ile Asn Thr	Ser Cys Leu Pro	Leu Leu Gln Pro	Thr Arg Asp Val Asp

285

20 25
Tyr Pro Lys Phe Tyr Gln Thr Leu His Arg Gln
35 40
5

(2) INFORMATION FOR SEQ ID NO: 142:

10 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 41 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 142:

15 Met Val His Val Leu Glu Ile Leu Leu Phe Ile Thr Met Gln Ala Val
1 5 10 15

20 Ser Phe Pro Phe Gln Thr Gln Ile Asp Thr Cys Asn Thr Gln Asp Pro
20 25 30

Ala Glu Arg Gln Pro Ala Ser Ile Val
35 40

25

(2) INFORMATION FOR SEQ ID NO: 143:

30 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 70 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 143:

35 Met Gly Ser Cys Ser Lys Asn Arg Ser Phe Phe Trp Met Thr Gly Leu
1 5 10 15

Leu Val Phe Ile Ser Leu Leu Leu Ser Glu Trp Gln Gly Pro Trp Glu
20 25 30

40 Gly Arg Ala Ile Gly Glu Gly Trp Ala Ser Trp Ala Leu Thr Asn Gly
35 40 45

Trp Ala Val Gln Leu Leu Met Ser Leu Gly Asn Asn Thr Glu Lys His
50 55 60

Ser Val Met Ile Tyr Glu
65 70

50

(2) INFORMATION FOR SEQ ID NO: 144:

55 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 483 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 144:

60 Met Ala Thr Gly Gly Gly Ile Arg Ala Met Thr Ser Leu Tyr Gly Gln

Val Val Ser Tyr Pro Phe Asp Met Thr Arg Thr Pro Trp Ala Ala Arg
 145 150 155 160
 5 Glu Leu Thr Pro Thr Pro Asp Asp Ala Val Phe Arg Trp Leu Ser Thr
 165 170 175
 Val Tyr Ala Gly Ser Asn Leu Ala Met Gln Asp Thr Ser Arg Arg Pro
 180 185 190
 10 Cys His Ser Gln Asp Phe Ser Val His Gly Asn Ile Ile Asn Gly Ala
 195 200 205
 Asp Trp His Thr Val Pro Gly Ser Met Asn Asp Phe Ser Tyr Leu His
 210 215 220
 Thr Asn Cys Phe Glu Val Thr Val Glu Leu Ser Cys Asp Lys Phe Pro
 225 230 235 240
 20 His Glu Asn Glu Leu Pro Gln Glu Trp Glu Asn Asn Lys Asp Ala Leu
 245 250 255
 Leu Thr Tyr Leu Glu Gln Val Arg Met Gly Ile Ala Gly Val Val Arg
 260 265 270
 25 Asp Lys Asp Thr Glu Leu Gly Ile Ala Asp Ala Val Ile Ala Val Asp
 275 280 285
 Gly Ile Asn His Asp Val Thr Thr Ala Trp Gly Gly Asp Tyr Trp Arg
 290 295 300
 30 Leu Leu Thr Pro Gly Asp Tyr Met Val Thr Ala Ser Ala Glu Gly Tyr
 305 310 315 320
 35 His Ser Val Thr Arg Asn Cys Arg Val Thr Phe Glu Glu Gly Pro Phe
 325 330 335
 Pro Cys Asn Phe Val Leu Thr Lys Thr Pro Lys Gln Arg Leu Arg Glu
 340 345 350
 40 Leu Leu Ala Ala Gly Ala Lys Val Pro Pro Asp Leu Arg Arg Arg Leu
 355 360 365
 45 Glu Arg Leu Arg Gly Gln Lys Asp Xaa
 370 375

(2) INFORMATION FOR SEQ ID NO: 141:

50

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

55

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 141:

Met Ile Cys Leu Ile Leu Leu Leu Gln Ala Val Val Phe Leu Arg Ser
 1 5 10 15

60

Leu His Val Val His Asn Phe Gln Ile Leu Asp Leu Ser Gly Thr Ser

(2) INFORMATION FOR SEQ ID NO: 139:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 73 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 139:

10 Met Gly Trp Leu Phe Leu Lys Val Leu Leu Ala Gly Val Ser Phe Ser
1 5 10 15

Gly Phe Leu Tyr Pro Leu Val Asp Phe Cys Ile Ser Gly Lys Thr Arg
20 25 30

15 Gly Gln Lys Pro Asn Phe Val Ile Ile Leu Ala Asp Asp Met Gly Trp
35 40 45

20 Gly Asp Trp Gly Ala Asn Trp Ala Glu Thr Lys Asp Thr Ala Asn Leu
50 55 60

Asp Lys Met Ala Ser Glu Gly Met Xaa
65 70

25

(2) INFORMATION FOR SEQ ID NO: 140:

(i) SEQUENCE CHARACTERISTICS:

- 30 (A) LENGTH: 377 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 140:

35 Met His Gly Asn Glu Ala Leu Gly Arg Glu Leu Leu Leu Leu Leu Met
1 5 10 15

Gln Phe Leu Cys His Glu Phe Leu Arg Gly Asn Pro Arg Val Thr Arg
20 25 30

40 Leu Leu Ser Glu Met Arg Ile His Leu Leu Pro Ser Met Asn Pro Asp
35 40 45

45 Gly Tyr Glu Ile Ala Tyr His Arg Gly Ser Glu Leu Val Gly Trp Ala
50 55 60

Glu Gly Arg Trp Asn Asn Gln Ser Ile Asp Leu Asn His Asn Phe Ala
65 70 75 80

50 Asp Leu Asn Thr Pro Leu Trp Glu Ala Gln Asp Asp Gly Lys Val Pro
85 90 95

His Ile Val Pro Asn His His Leu Pro Leu Pro Thr Tyr Tyr Thr Leu
100 105 110

55 Pro Asn Ala Thr Val Ala Pro Glu Thr Arg Ala Val Ile Lys Trp Met
115 120 125

60 Lys Arg Ile Pro Phe Val Leu Ser Ala Asn Leu His Gly Gly Glu Leu
130 135 140

282

Tyr Phe Leu Ile Ala Ala Gly Val Val Val Phe Ala Leu Gly Phe Leu
 50 55 60
 5 Gly Cys Tyr Gly Ala Lys Thr Glu Ser Lys Cys Ala Leu Val Thr Phe
 65 70 75 80
 Phe Phe Ile Leu Leu Leu Ile Phe Ile Ala Glu Val Ala Ala Ala Val
 85 90 95
 10 Val Ala Leu Val Tyr Thr Thr Met Ala Glu His Phe Leu Thr Leu Leu
 100 105 110
 Val Val Pro Ala Ile Lys Lys Asp Tyr Gly Ser Gln Glu Asp Phe Thr
 115 120 125
 15 Gln Val Trp Asn Thr Thr Met Lys Gly Leu Lys Cys Cys Gly Phe Thr
 130 135 140
 Asn Tyr Thr Asp Phe Glu Asp Ser Pro Tyr Phe Lys Glu Asn Ser Ala
 145 150 155 160
 Phe Pro Pro Phe Cys Cys Asn Asp Asn Val Thr Asn Thr Ala Asn Glu
 165 170 175
 25 Thr Cys Thr Lys Gln Lys Ala His Asp Gln Lys Val Glu Gly Cys Phe
 180 185 190
 Asn Gln Leu Leu Tyr Asp Ile Arg Thr Asn Ala Val Thr Val Gly Gly
 195 200 205
 Val Ala Ala Gly Ile Gly Gly Leu Glu Leu Ala Ala Met Ile Val Ser
 210 215 220
 35 Met Tyr Leu Tyr Cys Asn Leu Gln Xaa
 225 230

40 (2) INFORMATION FOR SEQ ID NO: 138:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 61 amino acids

(B) TYPE: amino acid

45 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 138:

Met Gly Ser Ser Arg Trp Ser Val Ala Cys Pro Thr Gly Leu Gly Val
 1 5 10 15
 50 Leu Met Leu Gly Leu Gly Gly Asp His Pro Pro Gly Ser Gln Val Asp
 20 25 30
 Pro Leu Leu Met Gly Xaa Cys Val Arg Pro Xaa Leu Pro Glu Leu Thr
 35 40 45
 55 Ala Xaa Trp Arg Glu Xaa Gln Xaa Arg Ser Ala Ser Ala
 50 55 60

60

210

215

220

5 (2) INFORMATION FOR SEQ ID NO: 136:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 156 amino acids

(B) TYPE: amino acid

10 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 136:

Met Val Ile Glu Ile Ser Asn Lys Thr Ser Ser Ser Ser Thr Cys Ile
 1 5 10 15
 Leu Val Leu Leu Val Ser Phe Cys Leu Leu Leu Val Pro Ala Met Tyr
 20 25 30
 Ser Ser Asp Thr Arg Gly Ser Leu Pro Ala Glu His Gly Val Leu Ser
 35 40 45
 Arg Gln Leu Arg Ala Leu Pro Ser Glu Asp Pro Tyr Gln Leu Glu Leu
 50 55 60
 Pro Ala Leu Gln Ser Glu Val Pro Lys Asp Ser Thr His Gln Trp Leu
 65 70 75 80
 Asp Gly Ser Asp Cys Val Leu Gln Ala Pro Gly Asn Thr Ser Cys Leu
 85 90 95
 Leu His Tyr Met Pro Gln Ala Pro Ser Ala Glu Pro Pro Leu Glu Trp
 100 105 110
 Pro Phe Pro Asp Leu Phe Ser Glu Pro Leu Cys Arg Gly Pro Ile Leu
 115 120 125
 Pro Leu Gln Ala Asn Leu Thr Arg Lys Gly Gly Trp Leu Pro Thr Gly
 130 135 140
 Ser Pro Ser Val Ile Leu Gln Asp Arg Tyr Ser Gly
 145 150 155

45 (2) INFORMATION FOR SEQ ID NO: 137:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 233 amino acids

(B) TYPE: amino acid

50 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 137:

Met Met Ile Leu Phe Asn Leu Leu Ile Phe Leu Cys Gly Ala Ala Leu
 1 5 10 15
 Leu Ala Val Gly Ile Trp Val Ser Ile Asp Gly Ala Ser Phe Leu Lys
 20 25 30
 Ile Phe Gly Pro Leu Ser Ser Ser Ala Met Gln Phe Val Asn Val Gly
 35 40 45

Trp Ile Ser Leu Glu Gln Asn Gly Ile Met Val Glu Leu Pro Gln Leu
 435 440 445

5 Thr Ile His Gln Met Pro Cys Lys Trp Gly Trp Ala Leu Ala Leu Thr
 450 455 460

Asn Val Ile
 465

10

(2) INFORMATION FOR SEQ ID NO: 135:

15 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 222 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 135:

20 Met Trp Ser Ala Gly Arg Gly Gly Ala Ala Trp Pro Val Leu Leu Gly
 1 5 10 15

25 Leu Leu Leu Ala Leu Leu Val Pro Gly Gly Gly Ala Ala Lys Thr Gly
 20 25 30

Ala Glu Leu Val Thr Cys Gly Ser Val Leu Lys Leu Leu Asn Thr His
 35 40 45

30 His Arg Val Arg Leu His Ser His Asp Ile Lys Tyr Gly Ser Gly Ser
 50 55 60

Gly Gln Gln Ser Val Thr Gly Val Glu Ala Ser Asp Asp Ala Asn Ser
 65 70 75 80

35 Tyr Trp Arg Ile Arg Gly Gly Ser Glu Gly Gly Cys Arg Arg Gly Ser
 85 90 95

40 Pro Val Arg Cys Gly Gln Ala Val Arg Leu Thr His Val Leu Thr Gly
 100 105 110

Lys Asn Leu His Thr His His Phe Pro Ser Pro Leu Ser Asn Asn Gln
 115 120 125

45 Glu Val Ser Ala Phe Gly Glu Asp Gly Glu Gly Asp Asp Leu Asp Leu
 130 135 140

Trp Thr Val Arg Cys Ser Gly Gln His Trp Glu Arg Glu Ala Ala Val
 145 150 155 160

50 Arg Phe Gln His Val Gly Thr Ser Val Phe Leu Ser Val Thr Gly Glu
 165 170 175

Gln Tyr Gly Ser Pro Ile Arg Gly Gln His Glu Val His Gly Met Pro
 180 185 190

55 Ser Ala Asn Thr His Asn Thr Trp Lys Ala Met Glu Gly Ile Phe Ile
 195 200 205

60 Lys Pro Ser Val Glu Pro Ser Ala Gly His Asp Glu Leu Xaa

	Asn Ala Asn Gln Trp Ala Xaa Ile Phe Gln Ala Ser Gly Ala Lys Tyr	
	115	120 125
5	Ile Val Leu Thr Ser Lys His His Glu Gly Phe Thr Leu Trp Gly Ser	
	130	135 140
	Glu Tyr Ser Trp Asn Trp Asn Ala Ile Asp Glu Gly Pro Lys Arg Asp	
10	145	150 155 160
	Ile Val Lys Glu Leu Glu Val Ala Ile Arg Asn Arg Thr Asp Leu Arg	
		165 170 175
15	Phe Gly Leu Tyr Tyr Ser Leu Phe Glu Trp Phe His Pro Leu Phe Leu	
		180 185 190
	Glu Asp Glu Ser Ser Ser Phe His Lys Arg Gln Phe Pro Val Ser Lys	
		195 200 205
20	Thr Leu Pro Glu Leu Tyr Glu Leu Val Asn Asn Tyr Gln Pro Glu Val	
		210 215 220
	Leu Trp Ser Asp Gly Asp Gly Gly Ala Pro Asp Gln Tyr Trp Asn Xaa	
25	225	230 235 240
	Thr Gly Phe Leu Ala Trp Leu Tyr Asn Glu Ser Pro Val Arg Gly Thr	
		245 250 255
30	Val Val Thr Asn Asp Arg Trp Gly Ala Gly Ser Ile Cys Lys His Gly	
		260 265 270
	Gly Phe Tyr Thr Cys Ser Asp Arg Tyr Asn Pro Gly His Leu Leu Pro	
		275 280 285
35	His Lys Trp Glu Asn Cys Met Thr Ile Asp Lys Leu Ser Trp Gly Tyr	
		290 295 300
	Arg Arg Glu Ala Gly Ile Ser Asp Tyr Leu Thr Ile Glu Glu Leu Val	
40	305	310 315 320
	Lys Gln Leu Val Glu Thr Val Ser Cys Gly Gly Asn Leu Leu Met Asn	
		325 330 335
45	Ile Gly Pro Thr Leu Asp Gly Thr Ile Ser Val Val Phe Glu Glu Arg	
		340 345 350
	Leu Arg Gln Met Gly Ser Trp Leu Lys Val Asn Gly Glu Ala Ile Tyr	
		355 360 365
50	Glu Thr His Thr Trp Arg Ser Gln Asn Asp Thr Val Thr Pro Asp Val	
		370 375 380
	Trp Tyr Thr Ser Lys Pro Lys Glu Lys Leu Val Tyr Ala Ile Phe Leu	
55	385	390 395 400
	Lys Trp Pro Thr Ser Gly Gln Leu Phe Leu Gly His Pro Lys Ala Ile	
		405 410 415
60	Leu Gly Ala Thr Glu Val Lys Leu Leu Gly His Gly Gln Pro Leu Asn	
		420 425 430

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 553 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 133:

10 GGCAGAGAGC AGATGGCCTT GACACCAGCA GGGTGACATC CGCTATTGCT ACTTCTCTGC 60
TCCCCACAG TTCCTCTGGA CTTCTCTGGA CCACAGTCCT CTGCCAGACC CCTGCCAGAC 120
15 CCCAGTCCAC CATGATCCAT CTGGGTCACA TCCTCTTCCT GCTTTTGCTC CCAGTGGCTG 180
CAGCTCAGAC GACTCCAGGA GAGAGATCAT CACTCCCTGC CTTTACCCT GGCACATTCAG 240
GCTCTTGTTT CGGATGTGGG TCCCTCTCTC TGCCGCTCCT GGCAGGCCTC GTGGCTGCTG 300
20 ATCGGCTGGC ATCGCTGCTC ATCGTGGGG CGGTGTTCTT GTGCGCACGC CCACGCCGCA 360
GCCCCGCCCA AGATGGCAA GTCTACATCA ACATGCCAGG CAGGGGCTGA CCCTCCTGCA 420
GCTTGGACCT TTGACTTCTG ACCCTCTCAT CCTGGATGGT GTGTGGTGGC ACAGGAACCC 480
25 CCGCCCCAAC TTTTGGATTG TAATAAAACA ATTGAAACAC CAAAAAAAAA AAAAAAAAAA 540
AAAAAAAAAA AAA 553

30

(2) INFORMATION FOR SEQ ID NO: 134:

35 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 467 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 134:

40

Met Arg Pro Gln Glu Leu Pro Arg Leu Ala Phe Pro Leu Leu Leu Leu
1 5 10 15

45

Leu Leu Leu Leu Leu Pro Pro Pro Pro Cys Pro Ala His Ser Ala Thr
20 25 30

Arg Phe Asp Pro Thr Trp Glu Ser Leu Asp Ala Arg Gln Leu Pro Ala
35 40 45

50

Trp Phe Asp Gln Ala Lys Phe Gly Ile Phe Ile His Trp Gly Val Phe
50 55 60

55

Ser Val Pro Ser Phe Gly Ser Glu Trp Phe Trp Trp Tyr Trp Gln Lys
65 70 75 80

Glu Lys Ile Pro Lys Tyr Val Glu Phe Met Lys Asp Asn Tyr Pro Pro
85 90 95

60

Xaa Phe Lys Tyr Glu Asp Phe Gly Pro Leu Phe Thr Ala Lys Phe Phe
100 105 110

TTGATTTTGT TTCCATCTTC TGTAATCTTC CAAAGAATTA TATCTTTGTA AATCTCTCAA 2220
 TACTCAATCT ACTGTAAGTA CCCAGGGRGG STAATTTCTYT TAAAAAAAAA AAAAAAAAAA 2278
 5

(2) INFORMATION FOR SEQ ID NO: 132:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1088 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

15

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 132:

GGCAGGGGCG GCGTGAACCC GTCGGGCACT GTGTCCCTGA CAATGGGAAC AGCCGACAGT 60
 20 GATGAGATGG CCCCGGAGCC CCACAGCACA CCCACATCGA TGTGCACATC CACCAGGAGT 120
 CTGCCCTGGC CAAGCTCCTG CTCACCTGCT GCTCTGCGCT GCGGCCCCGG GCCACCCAGG 180
 25 CCAGGGGCGAG CANCCGGCTG CTGGTGGCCT CGTGGGTGAT GCAGATCGTG CTGGGGATCT 240
 TGAGTGCACT CCTAGGAGGA TTTTCTTACA TCCGCGACTA CACCCTCCTC GTCACCTCGG 300
 GAGCTGCCAT CTGGACAGGG GCTGTGGCTG TGCTGGCTGG AGCTGCTGCC TTCATTTAYG 360
 30 AGAAACGGGG TGGTACATAC TGGGCCCTGC TGAGGACTCT GCTARCGCTG GCAGCTTTCT 420
 CCACAGCCAT CGCTGCCCTC AAACCTTGGA ATGAAGATTT CCGATATGGC TACTCTTATT 480
 35 ACAACAGTGC CTGCCGCATC TCCAGCTCGA GTGACTGGAA CACTCCAGCC CCCACTCAGA 540
 GTCCAGAAGA AGTCAGAAGG CTACACCTAT GTACCTCCTT CATGGACATG CTGAAGGCCT 600
 TGTTCAGAAC CCTTCAGGCC ATGCTCTTGG GTGTCTGGAT TCTGCTGCTT CTGGCATCTC 660
 40 TGGCCCCCTCT GTGGCTGTAC TGCTGGAGAA TGTTCCTAAC CAAAGGGAAA AGAGACCAGA 720
 AGGAAATGTT GGAAGTGAGT GGAATCTAGC CATGCCTCTC CTGATTATTA GTGCCTGGTG 780
 45 CTCTCTGACC GGGCGTCCCT GCATCTGACT GCTGGAAGAA GAACCAGACT GAGGAAAAGA 840
 GGCTCTTCAA CAGCCCCAGT TATCCTGGCC CCATGACCGT GGCCACAGCC CTGCTCCAGC 900
 AGCACTTGCC CATTCCTTAC ACCCCTTCCC CATCTGCTC CGCTTCATGT CCCCTCCTGA 960
 50 GTAGTCATGT GATAATAAAC TCTCATGTTA TTGTTCCNAA AAAAAAAAAA AAAAAAAAAA 1020
 TGGGGGGGGG CCGGTACCCA TTGGGCCTNN GGGGGNGGTT TAAAATTAAT GGGGGGGGTT 1080
 55 TAAAAGGG 1088

60 (2) INFORMATION FOR SEQ ID NO: 133:

	CATGCAAAGG ATGGGATATT CCGCCGTTAT CGTGGCCCAG GAATCTTCGA AGACCTGCAG	420
5	AATTATATCT TAGAGAAGAA ATGGCAATCA GTCGAGCCTC TGACTGGCTG GAAATCCCCG	480
	GCTTCTCTAA CGATGTCTGG AATGGCTGGT CTTTTTAGCA TCTCTGGCAA GATATGGCAT	540
	CTTCACAAC TTTTCACAGT GACTCTTGGA ATTCTGCTT GGTGTTCTTA TGTCTTTTTC	600
10	GTCATAGCCA CCTTGGTTTT TGGCCTTTTT ATGGGTCTGG TCTTGGTGGT AATATCAGAA	660
	TGTTTCTATG TGCCACTTCC AAGGCATTTA TCTGAGCGTT CTGAGCAGAA TCGGAGATCA	720
15	GAGGAGGCTC ATAGAGCTGA ACAGTTGCAG GATGCGGAGG AGGAAAAAGA TGATTCAAAT	780
	GAAGAAGAAA ACAAGACAG CCTTGTAGAT GATGAAGAAG AGAAAGAAGA TCTTGGCGAT	840
	GAGGATGAAG CAGAGGAAGA AGAGGAGGAG GACAACTTGG CTGCTGGTGT GGATGAGGAG	900
20	AGAAGTGAGG CCAATGATCA GGGCCCCCA GGAGAGGACG GTGTGACCCG GGAGGNAAGT	960
	AGAGCCTGAG GAGGCTGAAG AAGGCATCTC TGAGCAACCC TGCCCAGCTG ACACAGAGGT	1020
25	GGTGAAGAC TCCTTGAGGC AGCGTAAAAG TCAGCATGCT GNCAAGGGAC TGTAGATTTA	1080
	ATGATGCGTT TTCAAGAATA CACACCAAAA CAATATGTCA GCTTCCCTTT GGCCTGCAGT	1140
	TTGTACCAA TCCTTAATTT TTCTGAATG AGCAAGCTTC TCTTAAAGA TGCTCTCTAG	1200
30	TCATTTGGTC TCATGGCAGT AAGCCTCATG TATACTAAGG AGAGTCTTCC AGGTGTGACA	1260
	ATCAGGATAT AGAAAAACAA ACGTAGTGTN TGGGATCTGT TTGGAGACTG GGATGGGAAC	1320
35	AAGTTCATTT ACTTAGGGGT CAGAGAGTCT CGACCAGAGG AGGCCATTCC CAGTCCTAAT	1380
	CAGCACCTTC CAGAGACAAG GCTGCAGGCC TGTGAAATGA AAGCCAAGCA GGAGCCTTGG	1440
	CTCTGAGGCA TCCCCAAGT GTAACGTAGA AGCCTTGCA TCTTTTCTTG TGTAAAGTAT	1500
40	TTATTTTTGT CAAATTGCAG GAAACATCAG GCACCACAGT GCATGAAAAA TCTTTCACAG	1560
	CTAGAAATTG AAAGGGCCTT GGGTATAGAG AGCAGCTCAG AAGTCATCCC AGCCCTCTGA	1620
45	ATCTCCTGTG CTATGTTTTA TTTCTTACCT TTAATTTTTT CAGCATTTCC ACCATGGGCA	1680
	TTCAGGCTCT CCACACTCTT CACTATTATC TCTTGGTCAG AGGACTCCAA TAACAGCCAG	1740
	GTTTACATGA ACTGTGTTTG TTCAATCTGA CCTAAGGGGT TTAGATAATC AGTAACCATA	1800
50	ACCCCTGAAG CTGTGACTGC CAAACATCTC AAATGAAATG TTGTRGCCAT CAGAGACTCA	1860
	AAAGGAAGTA AGGATTTTAC AAGACAGATT AAAAAAAT TGTTTTGTCC NAAAAATAG	1920
55	TTGTTGTTGA TTTTTTTTTA AGTTTTCTAA GCAATATTTT TCAAGCCAGA AGTCCTCTAA	1980
	GTCTTGCCAG TACAAGGTAG TCTTGTGAAG AAAAGTTGAA TACTGTTTTG TTTTCATCTC	2040
	AAGGGGTTC CTGGGTCTTG AACTACTTTA ATAATAACTA AAAAACCCT TCTGATTTTC	2100
60	CTTCAGTGAT GTGCTTTTGG TGAAAGAATT AATGAACTCC AGTACCTGAA AGTGAAAGAT	2160

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 130:

	AGAGGACGGT GTGACCCGGG AGGAAGTAGA GCCTGAGGAG GCTGAAGAAG GCATCTCTGA	60
5	GCAACCCTGC CCAGCTGACA CAGAGGTGGT GGAAGACTCC TTGAGGCAGC GTAAAAGTCA	120
	GCATGCTGAC AAGGGACTGT AGATTTAATG ATGCGTTTTC AAGAATACAC ACCAAAACAA	180
10	TATGTCAGCT TCCCTTTGGC CTGCAGTTTG TACCAATCC TTAATTTTTY YTGAATGAGC	240
	AAGCTTCTCT TAAAAGATGC TCTCTAGTCA TTTGGTCTCA TGGCAGTAAG CCTCATGTAT	300
	ACTAAGGAGA GTCTTCCAGG TGTGACAATC AGGATATAGA AAAACAAACG TAGTGTNTGG	360
15	GATCTGTTTG GAGACTGGGA TGGGAACAAG TTCATTTACT TAGGGGTCAG AGAGTCTCGA	420
	CCAGAGGAGG CCATTCCCAG TCCTAATCAG CACCTTCCAG AGACAAGGCT GCAGGCCCTG	480
20	TGAAATGAAA GCCAAGCAGG AGCCTTGGCT CTGAGNCATC CCCAAAGTGT AACGTAGAAG	540
	CCTTGCATCC TTTTCTTGTG TAAAGTATTT ATTTTTGTCA AATTGCAGGA AACATCAGGC	600
	ACCACAGTGC ATGAAAAATC TTTCACAGCT AGAAATTGAA AGGGCCTTGG GTATAGAGAG	660
25	CAGCTCAGAA GTCATCCCAG CCCTCTGAAT CTCCTGTGCT ATGTTTATT TCTTACCTTT	720
	AATTTTTCCA GCATTTCCAC CATGGGCATT CAGGCTCTCC AACTCTTCA CTATTATCTC	780
30	TTGGTCAGAG GACTCCAATA ACAGCCAGGT TTACATGAAC TGTGTTTGT CATCTGACC	840
	TAAGGGGTTT AGATAATCAG TAACCATAAC CCCTGAAGCT GTGACTGCCA AACATCTCAA	900
	ATGAAATGTT GTRCCATCA GAGACTCAA AGGAAGTAAG GATTTTACAA GACAGATTAA	960
35	AAAAAAATTG TTTTGTCCAA AAAANAAAAA AAAAAAATC GAAGGGGGG C	1011

40 (2) INFORMATION FOR SEQ ID NO: 131:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2278 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 131:

50	GTAATTCGGC ACGAGGCGCC CAACATGGCG GGTGGGCGCT GCGGCCCAGCA SCTAACGGCG	60
	CTCTGGCCG CCTGGATCGC GGCTGTGGCG GCGACGGCAG GCCCCAGGA GGCCGCGCTG	120
	CCGCCGGAGC AGAGCCGGGT CCAGCCCATG ACCGCCTCCA ACTGGACGCT GGTGATGGAG	180
55	GGCGAGTGGA TGCTGAAATT TTACGCCCCA TGGTGTCCAT CCTGCCAGCA GACTGATTCA	240
	GAATGGGAGG CTTTGTGAAA GAATGGTGAA ATACTTCAGA TCAGTGTGGG GAAGGTAGAT	300
60	GTCATTCAAG AACCAGGTTT GAGTGGCCG TTCTTTGTCA CCACTCTCCC AGCATTTTTTT	360

	GAGAGAGGCA CTTCGGGGCG CAGTCCTAAA TGGCGGCCCT CCCAGCACGC GCATCACACC	1380
5	TGAGTTCTCT AAATGGGCCA GTGATGAGAT GCCATCCACC AGCAATGGTG AAAGCAGCAA	1440
	GCAGGAGGCC ATGCAGAAGA CCTGCAAGAA CAGCGACATC GAGAAAATCA CCGAAGATTG	1500
	AGCTGTGACC ACGTTTGAGG CTCTGAAGGC TCGGGTCAGA GAACTTGAAC GGCAGCTATC	1560
10	TCGTGGGGAC CGTTACAAAT GCCTCATCTG CATGGACTCG TACTCGATGC CCCTAACGTC	1620
	CATCCAGTGT TGGCACGTGC ACTGCGAGGA GTGCTGGCTG CGGACCCTGG GTGCCAAGAA	1680
15	GCTCTGCCCT CAGTGCAACA CGATCACAGC GCCCGGAGAC CTGCGGAGGA TCTACTTGTG	1740
	AGCTATCTGC CCCAGGCAGG CCTCGCCTCC AGCAGCCCCA CCTGCCCCCA GCCTCTGTGA	1800
	CAGTGACCGT YTCCTTTTGT ACATACTTGC ACACAGGTTC CCCATGTACA TACATGCACA	1860
20	TACTCAAACA TGCGTACACA CACACACATT TACACACGCA GGA CTCTGGA GCCAGAGTAG	1920
	AGGCTGTGGC CCAGGCACTA CTGCTGGCT CCCACCTATG GTTTGGGGGC CATACCTGTT	1980
25	CCAGCTCTGT TCCCAGGGTG GGGCAGGGAG GTGGGGGTG GGGGAGTAGT GGGGCACGGC	2040
	TCCTAAGATC CAGCCCCCAT ACTGACAGAC GGACAGACAG ACATGCAAAC ACCAGACTGA	2100
	AGCACATGTA ATATAGACCG TGTATGTTTA CAATGTTGTG TATAAATGGG ACAACTCCTC	2160
30	GCCCTCTACC TGTCCTCTCC CCCTTTGGTT GTATGATTTT CTCTTTT TTTT AAGAACCCCT	2220
	GGAAGCAGCG CCTCCTTCAG GGTGGGCTGG GAGCTCGGCC CATCCACCTC TTGGGGTAYC	2280
35	TGCCTCTCTC TCTCCTGTGG TGTCCTTCC CTCTCCCATG TGCTCGGTGT TCAGTGGTGT	2340
	ATATTCTTTC TCCCAGACAT GGGGCACAG CCCCAAGGGA CATGATCCTC TCCTTAGTCT	2400
	TAGCTCATGG GGCTCTTTAT AAGGAGTTGG GGGGTAGAGG CAGGAAATGG GAACCGAGCT	2460
40	GAAGCAGAGG CTGAGTTAGG GGGCTAGAGG ACAGTGCTCC TGGCCACCCA GCCTCTGCTG	2520
	AGAACCATTG CTGGGATTAG AGCTGCCTTT CCCAGGGAAA AAGTGTCGTC TCCCCGACCC	2580
45	TCCCGTGGGC CCTGTGGTGT GATGCTGTGT CTGTATATTC TATACAAAGG TACTTGTCTT	2640
	TTCCCTTTGT AAAC TACATT TGACATGGAT TAAACAGTA TAAACAGTTA AAAAAAAAAA	2700
	AAAAAAAACT CGA	2713

50

(2) INFORMATION FOR SEQ ID NO: 130:

55

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1011 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

60

ACTGCGGCG CTGTCCCTTC TGTCTCTTC TCGCAGCCGT ACCCTTCTGT CGTCTTCTCG 1920
CAGCC 1925

5

(2) INFORMATION FOR SEQ ID NO: 129:

10

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 2713 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 129:

TCCTACCTTC CCAACCCTCT GGCATCCCCA GCACTGATGG TCCTGGCATC CACGGCTGAG 60
GCCAGCCGTG ACTGCTTCCA TCCCTTGTC A CAGCCACGA CCCTTTGGTG TACCTGTYTC 120
AGTTGACAAG GACGTGCATA TTCCTTTCAC CAACGGTTCC TATACCTTTG CCTCTATGTA 180
CCATCGGCAA GGTGGGGTGC CAGGCAC TTT TGCCAATCGT GATTTCCCCC CTTCTCTACT 240
ACACCTCCAC CCTCAATTTG CTCCCCCAA TCTAGATTGC ACCCCAATCA GTATGCTGAA 300
TCATAAGTGG TGTGGGGGTT TCCGGCCTTT GSCTCCACCC GRGGACCGGG RGAGYTATCA 360
GTCAGCTTTA CGCCGGCCAA GCGACTTAAG AACTGCCATG ACACAGAGTC TCCCCACTTG 420
CGCNTCTCAG ATGCAGATGG GAANGAATAT GACTTTGGGA CACAGCTGCM ATCTAGCTCC 480
CCCGGTTTCAC TAAAGGTTGA TGACACTGGG AAGAAGATTT TTGCTGTCTC TGGCCTCAIT 540
TCTGATCGGG AAGCCTCATC TAGCCCAGAG GNTCGGNAAT GACAGATGTA AGAAGAAAGC 600
AGCGGCATTG TTCGACAGCC AGGCCCAAT TTGCCCCATC TGCCAGGTCC TGCTGAGGCC 660
CAGTGAGCTG CAGGAGCATA TGGAGCAGGA ACTGGAGCAG CTAGCCCAAC TGCCCTCGAG 720
CAAGAATTCC CTTCTGAAGG ATGCCATGGC TCCAGGCACC CCAAAGTCCC TCCTGTTGTC 780
TGCTTCCATC AAGAGGGAAG GAGAGTCTCC AACGGCATCA CCCCCTCAT CTGCCACCGA 840
TGACCTCCAC CATTCAGACA GATACCAGAC CTTTCTGCGA GTACGAGCCA ACCGGCAGAC 900
CCGAYTGAAT GYTGGATTG GGAAAATGAA ACGGAGGAAG CAAGATGAAG GGCAGGTATG 960
TCCCCTGTGC AACCGCCCCC TGGCAGGATC GGAGCAGGAG ATGAGTAGGC ATGTGGAGCA 1020
TTGCCCTTTCT AAGAGGGAAG GCTCCTGCAT GGCTGAGGAT GATGCTGTGG ACATCGAGCA 1080
TGAGAACAAC AACCGCTTTG AGGAGTATGA GTGGTGTGGA CAGAAGCGGA TACGGGCCAC 1140
CACTCTCCTG GAAGGTGGCT TCCGAGGCTC TGGCTTCATC ATGTGCAGCG GCAAAGAGAA 1200
CCCGGACAGT GATGCTGACT TGGATGTGGA TGGGGATGAC ACTCTGGAGT ATGGGAAGCC 1260
ACAATACACA GAGGCTGATG TCATCCCCTG CACAGGCGAG GAGCCTGGTG AAGCCAAGGA 1320

	ACTCTGGCAC CACTCTCCAG GCTGCCATGG GGCCCAGCAC CCCTCTCCTC ATCTTGTTCC	120
	TTTTGTTCATG GTCGGGACCC CTCCAAGGAC AGCAGCACCA CCTTGTGGAG TACATGGAAC	180
5	GCCGACTAGC TGCTTTAGAG GAACGGCTGG CCCAGTGCCA GGACCAGAGT AGTCGGCATG	240
	CTGCTGAGCT GCGGGACTTC AAGAACAAGA TGCTGCCACT GCTGGAGGTG GCAGAGAAGG	300
10	AGCGGGAGGC ACTCAGAACT GAGGCCGACA CCATCTCCGG GAGAGTGGAT CGTCTGGAGC	360
	GGGAGGTAGA CTATCTGGAG ACCCAGAACC CAGCTCTGCC CTGTGTAGAG TTTGATGAGA	420
	AGGTGACTGG AGGCCCTGGG ACCAAAGGCA AGGGAAGAAG GAATGAGAAG TACGATATGG	480
15	TGACAGACTG TGGCTACACA ATCTCTCAAG TGAGATCAAT GAAGATTCTG AAGCGATTTG	540
	GTGGCCCAGC TGGTCTATGG ACCAAGGATC CACTGGGGCA AACAGAGAAG ATCTACGTGT	600
	TAGATGGGAC ACAGAATGAC ACAGCCTTTG TCTTCCCAAG GCTGCCGTGAC TTCACCCTTG	660
20	CCATGGCTGC CCGGAAAGCT TCCCGAGTCC GGGTGGCCTT CCCCTGGGTA GGCACAGGGC	720
	AGCTGGTATA TGGTGGCTTT CTTTATTTTG CTCGGAGGCC TCCTGGAAGA CCTGGTGGAG	780
25	GTGGTGAGAT GGAGAACACT TTGCAGCTAA TCAAATTCCA CCTGGCAAAC CGAACAGTGG	840
	TGGACAGCTC AGTATTCCCA GCAGAGGGGC TGATCCCCC CTACGGCTTG ACAGCAGACA	900
	CCTACATCGA CCTGGCAGCT GATGAGGAAG GTCTTTGGGC TGTCTATGCC ACCCGGGAGG	960
30	ATGACAGGCA CTTGTGTCTG GCCAAGTTAG ATCCACAGAC ACTGGACACA GAGCAGCAGT	1020
	GGGACACACC ATGTCCCAGA GAGAATGCTG AGGCTGCCTT TKTCATCTGT GGGACCCTCT	1080
35	ATGTGCTCTA TAACACCCGT CTGCCAGTC GGGCCCGCAT CCAGTGCTCC TTTGATGCCA	1140
	GCGGACCCTG ACCCCTGAAC GGGCAGCACT CCCTTATTTT CCCCAGAGAT ATGGTGCCCA	1200
	TGCCAGCCTC CGCTATAACC CCCGAGAACG CCAGCTCTAT GCCTGGGATG ATGGCTACCA	1260
40	GATTGTCTAT AAGCTGGAGA TGAGGAAGAA AGAGGAGGAG GTTTGAGGAG CTAGCCTTGT	1320
	TTTTTGCATC TTTCTCACTC CCATACATTT ATATTATATC CCCACTAAAT TTCTTGTTC	1380
45	TCATTCCTCA AATGTGGGCC AGTTGTGGCT CAAATCCTCT ATATTTTTAG CCAATGGCAA	1440
	TCAAATTCCT TCAGCTCCTT TGTTCATAC GGAAGTCCAG ATCCTGAGTA ATCCTTTTAG	1500
	AGCCCGAAGA GTCAAAACCC TCAATGTTCC CTCCTGCTCT CCTGCCCCAT GTCAACAAAT	1560
50	TTCAAGCTAA GGATGCCCCA GACCCAGGGC TCTAACCTTG TATGCGGGCA GGCCAGGGA	1620
	GCAGGCAGCA GTGTTCTTCC CCTCAGAGTG ACTTGGGGAG GGAGAAATAG GAGGAGACGT	1680
55	CCAGCTCTGT CCTCTCTTCC TCATCCTCC CTTCACTGTC CTGAGGAACA GGACTTTCTC	1740
	CACATTTGTTT TGTATTGCAA CATTTTGCAT TAAAAGGAAA ATCCAMAAAA AAAAAAAAAA	1800
60	AAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA	1860

AGAAGGGAGG GTGAGGGTAG AAGAAAGTTA TTCCCGAAGA AAAAAAGAAT GAAAAGTCAT 1200
 TGTACTGAAC TGTTTTTATA TTTTAAAAAG TTAATTTTA AAGCGGACGT CGTGGGTCGA 1260
 5 CCCGGGAATT CCCGGACCGG TACTGTCAGG TCTAAC 1296

10 (2) INFORMATION FOR SEQ ID NO: 127:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 737 base pairs
 (B) TYPE: nucleic acid
 15 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 127:

20 GGCANAGTGG AGGCAATGCC AGCTCCAGGA CAGAGGCTCA GGTGCCCAAC GGGCAAGGCA 60
 GCCCAGGGGG CTGTGTCTGT TCAAGTCAGG CTTCCCCGGC CCYTCCGCGA NCAGCGCTTC 120
 CACGGGCAGC CCGGGGCCCC ACCCCACGCA CTGAAGAGGC CGCCTGGGCT GCCATGGCCC 180
 25 TGACCTTCCT GCTGGTGCTG CTCACCTGG CCACGCTCTG CACACGGCTG CACAGAACT 240
 TCCGACCGG GGAGAGCATC TACTGGGGGC CCACAGCGGA CAGCCAGGAC ACAGTGGCTG 300
 30 CTGTGCTGAA GCGGAGGCTG CTGCAGCCCT CGCGCCGGT CAAGCGCTCG CGCCGGAGAC 360
 CCYTCYTCCC GCCCACCCG GACAGCGGCC CGGAAGGCGA GAGCTCGGAG TGACGGCCTG 420
 GGACCTGCCA CTGTGGCGTG CGGTCTCCCC GCGCCGCGAG GCCGCGAMCT NTGCCACGTG 480
 35 GACCGCGCGC NGGGCGCTMC CCTGGTGGCG ATGGCGCGC ACTGGCGAGC ACTGCGKGGG 540
 CTTTCCTCCT TGTGTGTTGC TGAGTGGGCG GCCAAGGGGA GAAAAGGAGC CGCTTYTGCC 600
 40 TCCCTTGCCA AAACCTCGTT TCTAATTAAT TTATTTTATG TAGAAAAAAA AAAAAAAA 660
 AAAAAAAA AAAAAAAA AAAAAAAC TCGAGGGGGG GCCCGGTACC CAATTNGCCA 720
 AATAGCGATC GTATNAA 737
 45

50 (2) INFORMATION FOR SEQ ID NO: 128:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1925 base pairs
 (B) TYPE: nucleic acid
 55 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 128:

60 CCCCCTCC AAAGCTAACC CTCGGGCTTG AGGGGAAGAR GCTGACTGTA CGTTCCTTCT 60

CATGACTGAA AAGAGCAYCT GTACTTTTCA AGCCACTGGA GGGARAAATG GAAAACATGA 1140
 AAACAGCAAT CTTCTTATGC TTCTGAATAA TCAAAGACTA ATTTGTGRTT TTACTTTTTA 1200
 5 ATAGATATGA CTTTGCTTCC AACATGGAAT GAAATAAAAA ATAAATAATA AAAGATTGCC 1260
 ATGGAAAAAA AAAAGNNGGG AN 1282

10

(2) INFORMATION FOR SEQ ID NO: 126:

15 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1296 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

20

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

GGCAGAGCTT AGAGTGTGGA AAAGCAACC AGGTTGGCCG TAAGTGCCTG CTGGAATGCG 60
 25 TGTGCCTCCA CASGGRTCTG GGCATCCGGA CTGATAACCA GCCGGCCAGA CTGAGGGATG 120
 GAAGGCACTG AGATGGGGGC CCGTCCAGGC GGACACCCGC AGAAATGGAG CTTTCTGTGG 180
 TCTCTTGAC TCTGGCTGCC TCTTGCCCTC TCTGTGTCTC TCTTTCTTGG TCTCTCCCTC 240
 30 TCTCCTCCTC AGCCTGGTCT TTCTCTTTGG TGCACACTTA GTTATTGTTG TGAGCAATGG 300
 AAGTTCAAAG GAACTCCCTC TCCAGCTCTT CTGAATCTTG GGACACAGCC TAAAAAGGAC 360
 35 AAAAAAGTTAG AAGACAGCAT AGCAACTCAG CTCAGGGRGC TACCAGAGAA AAATAGCAAC 420
 TGATGTGGGT GCTTTTITTT TTTTITTAAT TTGAATAAAA AGAATTAGAA GTGATGTCCT 480
 TTTATAAAAT GCCTTCTCCC CCTTCCCGCC TACAGTCTCT TCCTCTCCCC TTAGAGGGGG 540
 40 GAAAGTGTAT AAACCTACAG GGTGTGAGT CTGAAAAGAG GATCCCCCTC ACCCCCACCC 600
 TGGGCAGAGC AGTGGGGGT TGGGGGTGGG AGAGGGGGAC ACAGATCCTG GCACACTGTG 660
 45 GATATTTCTT GCAGATTGCA GTCTCTTG TGCCCAAACAG GTTAGGTAGA CTATCGCCTC 720
 TGGCAGGTGC CACCTTTTGG TACCAACATG TTCTGAGGTG TTAGGATTTG GGTGGGTTT 780
 TTTTGTGTTG TTTTITTTTT CCNITGGTC TTTTITTTTT TCYCCTTKTA AAGAAAAGCT 840
 50 AAAGGCCGCT GTGAGTCCTG GTGGCAGGCT CTCCATGGAT GTAGCATATC GAAGATAATT 900
 TTTATACTGC ATTTTATG ATTATTTTGT AATGTGTGAT TCCGTCTGCT GAGGAGGTGG 960
 55 GAGGGGCTCC AGGGAAAGCC ACCCACCTTC AGTGAGGTTG CTCCCCAGCT GAGCGCACCG 1020
 GGCATGGGAT GTGGAGGCTG GCGACACACC CTGTGCTCT CCAAGGCTGG GCGCGTGGGG 1080
 CGTCCAGAGT CTCTCTGGGT CTCAGATGTC CATCTGCCAC CTCTTGTTAA GGCTCTAGCC 1140
 60

TGTCTGGGAC AGGCCCTCAG CCCCTCCTGC CCCATCCACC CAGACAAGCA ATAAAAGTGG 1560
 TCTCCTCCCT GTGCATGCTT CTGCTTTCAG CCCAGCCTC GTCACTTGAC TGTGAGGATC 1620
 5 CTCTGGGTGT CAGGGAAGTC CTCTCCAGC AGTGAGTCAT CGAAGGGTTC ACAAAGGTG 1680
 TCGCTGCCAA AGACAGGGTT GGGACAGAG ACCAGGGTGG GGTGGTCCC TTCTTGCCAC 1740
 10 GGTGAGAAGT CGTCGTCAGC CGGACGCGTG GGTGACCCG GGAATCCGG ACCGGTACCT 1800
 GCAG 1804

15

(2) INFORMATION FOR SEQ ID NO: 125:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1282 base pairs
 20 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

CCGCAGGNCA GCGACGCGAC TCTGGTGCGG GCCGTCTTCT TCCCCCGAG CTGGGCGTGC 60
 GCGGCCGCAA TGAAGTGGGA GCTGCTGCTG TGGCTGCTGG TGCTGTGCGC GCTGCTCCTG 120
 30 CTCTTGGTGC AGCTGCTGCG CTTCTGAGG GCTGACGGCG ACCTGACGCT ACTATGGGCC 180
 GAGTGGCAGG GACGACGCCC AGAATGGGAG CTGACTGATA TGGTGGTGTG GGTGACTGGA 240
 GCCTCGAGTG GAATTGGTGA GGAGCTGGCT TACCAGTTGT CTAAACTAGG AGTTTCTCTT 300
 35 GTGCTGTCAG CCAGAAGAGT GCATGAGCTG GAAAGGGTGA AAAGAAGATG CCTAGAGAAT 360
 GGCAATTITAA AAGAAAAAGA TATACTTGTT TTGCCCCCTG ACCTGACCGA CACTGGTTCC 420
 40 CATGAAGCGG CTACCAAAGC TGTCTCCAG GAGTTTGGTA GAATCGACAT TCTGGTCAAC 480
 AATGGTGGAA TGTCCAGCG TTCTCTGTGC ATGGATACCA GCTTGGATGT CTACAGAAAG 540
 CTAATAGAGC TTAACACTT AGGGACGGTG TCCTTGACAA AATGTGTTCT GCCTCACATG 600
 45 ATCGAGAGGA AGCAAGGAAA GATTGTTACT GTGAATAGCA TCCTGGGTAT CATATCTGTA 660
 CCTCTTTCCA TTGGATACTG TGCTAGCAAG CATGCTCTCC GGGGTPTTTT TAATGGCCTT 720
 50 CGAACAGAAC TTGCCACATA CCCAGGTATA ATAGTTTCTA ACATTGCCC AGGACCTGTG 780
 CAATCAAATA TTGTGGAGAA TTCCCTAGCT GGAGAAGTCA CAAAGACTAT AGGCAATAAT 840
 GGAGACCAGT CCCACAAGAT GACAACCACT CGTTGTGTGC GGCTGATGTT AATCAGCATG 900
 55 GCCAATGATT TGAAAGAAGT TTGGATCTCA GAACAACCTT TCTTGTAGT AACATATTTG 960
 TGGCAATACA TGCCAACCTG GGCCTGGTGG ATAACCAACA AGATGGGGA GAAAAGGATT 1020
 60 GAGAACTTTA AGAGTGGTGT GGATGCAGAC TCTTCTTATT TTAAATCTT TAAGACAAA 1080

(2) INFORMATION FOR SEQ ID NO: 124:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 1804 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

10 CGCACCTATG GGCTCGCTAC CAGGACATGC GGAGACTGGT GCACGACCTC CTGCCCCCG 60
AGGTCTGCAG TCTCCTGAAC CCAGCAGCCA TCTACGCCAA CAACGAGATC AGCCTGCGTG 120
15 ACGTTGAGGT CTACGGCTTT GACTACGACT ACACCCTGGC CCAGTATGCA GACGCACTGC 180
ACCCCGAGAT CTTCACTACC GCCCCTGACA TCCTGATCGA GCACTACAAG TACCCAGAAG 240
GGATTCCGAA GTATGACTAC AACCCAGCT TTGCCATCCG TGGCCTCCAC TATGACATTC 300
20 AGAAGAGCCT TCTGATGAAG ATTGACGCCT TCCACTACGT GCAGCTGGGG ACAGCCTACA 360
GGGGCTCCA GCCTGTGCCA GACGAGGAGG TGATTGAGCT GTATGGGGT ACCCAGCACA 420
25 TCCCACTATA CCAGATGAGT GGCTTCTATG GCAAGGGTCC CTCCATTAAG CAGTTCATGG 480
ACATCTTCTC GCTACCGGAG ATGGCTCTGC TGTCTGTGT GGTGGACTAC TTTCTGGGCC 540
ACAGCCTGGN AGTTTGACCA AGCACATCTC TACAAGGACG TGACGGACGC CATCCGAGAC 600
30 GTGCATGTGA AGGGCCTCAT GTACCACTGG ATCGAGCAGG ACATGGAGAA GTACATCCTG 660
AGAGGGGATG AGACGTTTGC TGTCTGAGC CGCCTGGTGG CCCATGGGAA ACAGCTGTTC 720
35 CTCATCACCA ACAGTCTTTT CAGCTTCGTA GACAAGGGGA TGCGGCACAT GGTGGGTCCC 780
GATTGGCGCC ACTTTTCGAT GTGGTCAITG TCCAGGCAGA CAAGCCCAGC TTCTTCACTG 840
ACCGGCGCAA GCTTTTCAGA AAATCGATG AGAAGGGCTC ACTTCAGTGG GACCGGATCA 900
40 CCCGCTTGA AAAGGGCAAG ATCTATCGGC AGGGAACCT GTTTGACTTC TTACGCTTGA 960
CGGAATGGCG TGGCCCCCGC GTGCTCTACT TCGGGGACCA CCTCTATAGT GATCTGGCGG 1020
45 ATCTCATGCT GCGGCACGGC TGGCGCACAG GCGCCATCAT CCCCAGCTG GAGCGTGAGA 1080
TCCGCATCAT CAACACGGAG CAGTACATGC ACTCGCTGAC GTGGCAGCAG GCGCTCACGG 1140
GGCTGCTGGA GCGCATGCAG ACCTATCAGG ACGCGGAGTC GAGGCAGGTG CTGGCTGCCT 1200
50 GGATGAAAGA GCGCAGGAG CTGAGGTGCA TCACCAAGGC CCTGTTCAAT GCGCAGTTCG 1260
GCAGCATCTT CCGCACCTTC CACAACCCCA CCTACTTCTC AAAGGCGCCT CGTGCGCTTC 1320
55 TCTGACCTCT ACATGGCCTC CCTCAGCTGC CTGCTCAACT ACCGCGTGA CTTCACCTTC 1380
TACCCACGCC GTACGCCGCT GCAGCACGAG GCACCCCTCT GGATGGACCA GCTCTGCACC 1440
GGCTGCATGA AGACCCCTT CCTTGGTGAC ATGGCCACA TCCGCTGAGG GCACCTTTAT 1500
60

GAAGAG

1686

5

(2) INFORMATION FOR SEQ ID NO: 123:

(i) SEQUENCE CHARACTERISTICS:

10

(A) LENGTH: 1211 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

15

CAGCCTGTGC CAGACGAGGA GGTGATTGAG CTGTATGGGG GTACCCAGCA CATCCCACTA 60

TACCAGATGA GTGGCTTCTA TGGCAAGGGT CCCTCCATTA AGCAGTTCAT GGACATCTTC 120

20

TCGCTACCGG AGATGGCTCT GCTGTCTCTGT GTGGTGGACT ACTTCTTGGG CCACAGCCTG 180

GAGTTTGACC AAACATCTCT ACAAGGACGT GACGGACGCC ATCCGAGACG TGCATGTGAA 240

25

GGGCCTCATG TACCAGTGA TCGAGCAGGA CATGGAGAAG TACATCCTGA GAGGGGATGA 300

GACGTTTGCT GTCCTGAGCC GCCTGGTGGC CCATGGGAAA CAGCTGTTCC TCATCACCAA 360

CAGTCTTTTC AGCTTCGTAG ACAAGGGGAT GCGGCACATG GTGGGTCCCG ATTGGCGCCA 420

30

CTCTTCGATG TGGTCATTGT CCAGGCAGAC AAGCCCAGCT TCTTCACTGA CCGGCGCAAC 480

TTTCAGAAAA CTCGATGAGA AGGGCTCACT TCAGTGGGAC CGGATCACCC GCTTGGAAAA 540

35

GGGCAAGATC TATCGGCAGG GAAACCTGTT TGACTTCTTA CGCTTGACGG AATGGCGTGG 600

CCCCCGCGTG CTCTACTTCG GGGACCACCT CTATAGTGAT CTGGCGGATC TCATGCTGCG 660

GCACGGCTGG CGCACAGGCG CCATCATCCC CGAGCTGGAG CGTGAGATCC GCATCATCAA 720

40

CACGGAGCAG TACATGCACT CGCTGACGTG GCAGCAGGCG CTCACGGGGC TGCTGGAGCG 780

CATGCAGACC TATCAGGACG CGGAGTCGAG GCAGGTGCTG GCTGCCTGGA TGAAAGAGCG 840

45

GCAGGAGCTG AGGTGCATCA CCAAGGCCCT GTTCAATGCG CAGTTCGGCA GCATCTTCCG 900

CACCTTCCAC AACCCACCT ACTTCTCAAG GCGCCTCGTG CGCTTCTCTG ACCTCTACAT 960

GGCCTCCCTC AGCTGCCTGC TCAACTACCG CGTGGACTTC ACCTTCTACC CACGCCGTAC 1020

50

GCCGCTGCAG CACGAGGCAC CCCTCTGGAT GGACCAGCTT CTGCACCGGC TGATGAAGA 1080

CCCCCTCCTT TGGTGACATG GCCACATCC GCTGAGGGCA CCTTTATTGT CTGGGACAGG 1140

55

CCCTCAGCCC CTCCTGCCCC ATCCACCCAG ACAAGCAATA AAAGTGGTCT CCTCCCTGAA 1200

AAAAAAAAA A 1211

60

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

5	GCTGGAGATT CACATTTTAC CTGATTGCCT TCATTGCCGG CATGGCCGTC ATTGTGGATA	60
	AACCCCTGGTT CTATGACATG AAGAAAGTTT GGGAGGGATA TCCCATACAG AGCACTATCC	120
	CTTCCCAGTA TTGGTACTAC ATGATTGAAC TTTCTTCTA CTGGTCCCTG CTCTTCAGCA	180
10	TTGCCTCTGA TGTCAAGCGA AAGGATTTC AAGAACAGAT CATCCACCAT GTGRCCACCA	240
	TCATTCTCAT CAGCTTTTCC TGGTTTGCCA ATTACATCCG AGCTGGGACT CTAATCATGG	300
15	CTCTGCATGA CTCTTCCGAT TACCTGCTGG AGTCAGCCAA GATGTTTAAC TACGCGGGAT	360
	GGAAGAACAC CTGCAACAAC ATCTTCATCG TCTTCGCCAT TGTTTTATC ATCACCOCAC	420
	TGGTCATCCT GCCCTTCTGG ATCTGCATT GCACCTGGT GTACCCACTG GAGCTCTATC	480
20	CTGCCTTCTT TGGSTATTAC TTCTTCAATT CCATGATGGG AGTTCTACAG CTGCTGCATA	540
	TCTTCTGGGC CTACCTCATT TTGCGCATGG CCCACAAGTT CATACTGGG AAAGCTGGTA	600
25	GAAGATGAAC GCAWGCRCGG GNAAGAAACA GAGAGCTCAG AGGGGGAGGA GGCTGCAGCT	660
	GGGGGAGGAG CAAAGAGCCG GCCCCTAGCC AATGGCCACC CCATCCTCAA TAACAACCAT	720
	CGTAAGAATG ACTGAACCAT TATTCCAGCT GCCTCCCAGA TTAATGCATA AAGCCAAGGA	780
30	ACTACCCYGC TCCCTGCGCT ATAGGGTCAC TTTAAGCTCT GGGGAAAAG GAGAAAGTGA	840
	GAGGAGAGTT CTCTGCATCC TCCCTCCTTG CTGTGACCC AGTTGCCTTT AAACCAAATT	900
35	CTAACCAGCC TATCCCCAGG TAGGGGACG TTGGTTATAT TCTGTTAGAG GGGACCGTC	960
	GTATTTTCCT CCCTACCCGC CAAGTCATCC TTTCTACTGC TTTTGAGGCC CTCCCTCAGC	1020
	TCTCTGTGGG TAGGGGTAC AATTCACATT CCTTATCTG AGAATTTGGC CCCAGCTGTT	1080
40	TGCCTTTGAC TCCCTGACCT CCAGAGCCAG GGTGTGCCT TATTGTCCA TCTGTGGCC	1140
	TCATTCTGCC AAAGCTGGAC CAAGGCTAAC CTTTCTAAGC TCCCTAACTT GGGCCAGAAA	1200
45	CCAAAGCTGA GCTTTTAACT TTCTCCCTCT ATGACACAAA TGAATTGAGG GTAGGAGGAG	1260
	GGTGACATA ACCCTTACCC TACCTCTGCC AAAAAGTGGG GGCTGTACTG GGGACTGCTC	1320
	GGATGATCTT TCTTAGTGCT ACTTCTTTCA GCTGTCCCTG TAGCGACAGG TCTAAGATCT	1380
50	GACTGCCTCC TCCTTCTCT GGCCTCTTCC CCCTTCCCTC TTCTCTTCAG CTAGGCTAGC	1440
	TGGTTTGAG TAGAATGGCA ACTAATTCTA ATTTTATTT ATTAATATT TGGGGTTTG	1500
55	GTTTAAAGC CAGAATTACG GCTAGCACCT AGCATTTTCAG CAGAGGGACC ATTTTAGACC	1560
	AAAATGTAAT GTTAATGGT TTTTMTTAA AATTAAAAGA TTAAATAAAA AATATTAAAT	1620
60	AAAACATGGC AATAAGTGT AGACTATTAG GAATTGAGAA GGGGGATCAA CTAAATAAAC	1680

TACATTTTTG TAAATTTTTG AAATGCTAGT AATGTGTTTT CACCAGCAAG TATTTGTTGC 1320
 AAACCTAATG TCATTTTCCT TAAGATGGT ACAGCTATGT AACCTGTATT ATTCTGGACG 1380
 5 GACTTATTAA AATACAAACA GACAAAAAAT AAAACAAAAC TTGAGTTCTA TTTACCTTGC 1440
 ACATTTTTTG TTGTTACAGT GAAAAAATG GTCCAAGAAA ATGTTTGCCA TTTTTCATT 1500
 GTTTCGTTTT TAACTGGAAC ATTTAGAAAG AAGGAAATGA ATGTGCATTT TATTAATTCC 1560
 10 TTAGGGGCAC AAGGAGGACA ATAATAGCTG ATCTTTTGAA ATTTGAAAAA CGTCTTTAGA 1620
 TGACCAAGCA AAAAGACTTT AAAAAATGGT AATGAAAATG GAATGCAGCT ACTGCAGCTA 1680
 15 ATAAAAAATT TTAGATAGCA ATTGTTACAA CCATATGCCT TTATAGCTAG ACATTAGAAT 1740
 TATGATAGCA TGAGTTTATA CATCTATTA TTTTTCCTCC CTTCTCATG TTTTATAAA 1800
 TAGGTAATAA AAAATGTTTT GCCTGCCAAT TGAATGATTT CGTAGCTGAA GTAGAAACAT 1860
 20 TTAGGTTTCT GTAGCATTAA ATTGTGAAGA CAACTGGAGT GGTACTTACT GAAGAACTC 1920
 TCTGTATGTC CTAGAATAAG AAGCAATGAT GTCTGCTTC TGATTTTTCT TGCATTTTAA 1980
 25 ATTCTCAGCC AACCTACAGC CATGATCTTT AGCACAGTGA TATCACCATG ACTTCACAGA 2040
 CATGGTCTAG AATCTGTACC CTTACCCACA TATGAAGAAT AAAATTGATT AAAGGTTAAA 2100
 AAAAAAWAA AAAAAMWAGG GGGGCCCGGT WCCCAG 2136
 30

35 (2) INFORMATION FOR SEQ ID NO: 121:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 219 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 40 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

45 GCCCTAGTAT CTGGCAGCT GTGCATGGAG ATAGCCAGAG GAAACATTTT TTTCTTAAT 60
 GRATGGTGA CCACATTTTG TTGTTCTTGC CTCCTATTAT CCGTGCSCA TTTGCATSCT 120
 GGTTCCTTCT ACAGTAGTTT ATGTAAATGT TGTTTGTGCC TTGTCGTTCT CAGTAGAATT 180
 50 GGTCTGTAA ACGAAACCTG GTCCTGTAAT TTCAGTATA 219

55 (2) INFORMATION FOR SEQ ID NO: 122:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1686 base pairs
 (B) TYPE: nucleic acid
 60 (C) STRANDEDNESS: double

TCCTAGAGCG AGAATTGGGG GAAAGCTGTT ATTTTATAT TAAAATACAT TCAGATGTAA 1980
AAAAAAAAA AAAAAANCT CGAGGGGGG CCCCCG 2016

5

(2) INFORMATION FOR SEQ ID NO: 120:

10

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 2136 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

GGGGACGGAG CCGCTGTCAA CTCTCCAACCT CAGCTCAGCT GATCGGTTGC CGCCGCCGCC 60
20 GCCGCCAGAT TCTGGAGGCG AAGAACGCAA AGCTGAGAAC ATGGACGTTA ATATCGCCCC 120
ACTCCCGGCC TGGGACGATT TCTTCCGGG TTCCGATCGC TTGCCCCGGC CGGACTTCAG 180
25 GGACATTTCC AAATGGAACA ACCGCGTAGT GAGCAACCTG CTCTATTACC AGACCAACTA 240
CCTGGTGGTG GCTGCCATGA TGATTTCCAT TGTGGGGTTT CTGAGTCCCT TCAACATGAT 300
CCTGGGAGGA ATCGTGGTGG TGCTGGTGT CACAGGGTTT GTGTGGGCAG CCCACAATAA 360
30 AGACGTCCTT CGCCGGATGA AGAAGCGCTA CCCCACGACG TTCGTTATGG TGGTCATGTT 420
GGCGAGCTAT TTCCTTATCT CCATGTTTGG AGGAGTCATG GTCTTTGTGT TTGGCATTAC 480
35 TTTTCCTTTG CTGTGATGT TTATCCATGC ATCGTTGAGA CTTCGGAACC TCAAGAACAA 540
ACTGGAGAAT AAAATGGAAG GAATAGGTTT GAAGAGGACA CCGATGGGCA TTGTCTCGGA 600
TGCCCTAGAA CAGCAGGAAG AAGGCATCAA CAGACTCACT GACTATATCA GCAAAGTGAA 660
40 GGAATAAACA TAACCTACCT GAGCTAGGCT TGCAGCAGAA ATTGAGTTGC AGCTTGCCCT 720
TGTCCAGACC TATKTTCTGC TTGCGTTTTT GAAACAGGAG GTGCACGTAC CACCCAATTA 780
45 TCTATGGCAG CATGCATGTA TAGGCCGAAC TATTATCAGC TCTGATGTTT CAGAGAGAAG 840
ACCTCAGAAA CCGAAAGAAA ACCACCACCC TCCTATTGTG TCTGAAGTTT CACGTGTGTT 900
TATGAAATCT AATGGGAAAT GGATCACACG ATTTCTTTAA GGAATTAAA AAAAATAAAA 960
50 GAATTACGGC TTTTACAGCA ACAATACGAT TATCTTATAG GAAAAAATAA ATCATTGTAA 1020
AGTATCAAGA CAATACGAGT AAATGAAAAG GCTGTTAAAG TAGATGACAT CATGTGTTAG 1080
55 CCTGTTCTTA ATCCCCTAGA ATTGTAATGT GTGGGATATA AATTAGTTTT TATTATTCTC 1140
TTAAAAATCA AAGATGATCT CTATCACTTT GCCACCTGTT TGATGTGCAG TGGAAACTGG 1200
TTAAGCCAGT TGTTCACTAT TCSTTTACAA ATATAAAGAT AGCTGTTTAG GATATTTTGT 1260
60

	GTTCCTCGAGG GCGTGGCGAG GCGCTGCGGG ANCCCAACAG GATGCCTTCC GTGCCTTCCA	180
5	TCAAGATCTC AATTTTGTGC GCAATTCCTA CAGCCCCTGT TGATTGGAGA GCTGGCTCCG	240
	GAAGAACCCA GCCAKGATGG ACCCTGAAT GCGCATGGTC GAGGACTTCC GAGCCCCTGCA	300
	CCAGGCAGCC GAGGACATGA AGCTGTTTGA TGCCAGTCCC ACCTTCTTTG CTTTCTACT	360
10	GGGCCACATC CTGGCCATGG AGGTGCTGGC CTGGCTCCTT ATCTACCTCC TGGGTCTTGG	420
	CTGGGTGCCC AGTGCCCTGG NCCGCCTTCA TCCTGGCCAT CTCTCAGGCT CAGTCTCTGT	480
15	GTCTGCAGCA TGACCTGGGC CATGCTCCAT CTTCAAGAAG TCCTGGTGGA ACCACGTGGC	540
	CCAGAAGTTC GTGATGGGGC AGCTAAAGGG CTTCTCCGCC CACTGGTGGA ACTTCCGCCA	600
	CTTCCAGCAC CAGCCAAGC CCAACATCTT CCACAAAGAC CCAGACGTGA CGGTGGCGCC	660
20	CGTYTTCCTC CTGGGGGAGT CATCCGTCGA GTATGGNCAA GAAGAAACGC AGATACCTAC	720
	CCTACAACCA GCAGCACCTG TACTTCTTCC TGATCGGCCC GCCGCTGCTC ACCCTGGTGA	780
25	ACTTTGAAGT GGAAAATCTG GCGTACATGC TGGTGTGCAT GCAGTGGGCG GATTTGCTCT	840
	GGGCCGCCAG CTTCTATGCC CGCTTCTTCT TATCCTACCT CCCCTTCTAC GCGCTCCCTG	900
	GGGTGCTGCT CTTCTTGTGTT GCTGTCAGGT ATGGCAGGGA GTGGCGAGGT CACACACAGG	960
30	CGACAGGTGA CCCCCACTGC AGCCCCCAC CAGAGCTTCC CTTTTCCTCGT CTGCAGAATG	1020
	GGGCCAGTGG TACTGCCTCC CTGGCTTGCT GGTGGAATCA CATAAACACA AGYTTCAGGA	1080
35	GCCCAGGGTC GGTGGGTTTA GGGAGCGTGG CCTGGCTTGT AAGTGGCCCG GTGGGTGTCTG	1140
	GAGCTGCTCT GGACTCAGCC TCACAGTGA CACTGCTCCA TTCAGATTCT TTAAACACTG	1200
	GCAAGGGGGC GATGGCCACA ATCCTATTGT ACAGATAAGG AAGTCAAGGC CAYTTGGGGA	1260
40	CAGYTCTCT TCCAGCCTCC ACTCAGGGTG CCTTAAGTGG TGAGCTGGAC CTAGGGCAGT	1320
	GCCGAGCYTC CCCACAGGGT CCTGGAAAGC CACTGGTTCG TGTGGATCAC ACAGATGAAC	1380
45	CACATCCCCA AGGAGATCGG CCACGAGAAG CACCGGGACT GGGTCAGCTC TCAGCTGGCA	1440
	GCCACCTGCA ACGTGGAGCC CTCACTTTTC ACCAACTGGT TCAGCGGGCA CCTCAACTTC	1500
	CAGATCGAGC ACCACCTCTT CCCCAGGATG CCGAGACACA ACTACAGCCG GGTGGCCCCG	1560
50	CTGGTCAAGT CGCTGTGTGC CAAGCACGGC CTCAGCTACG AATGAAGCCC TTCCTCACC	1620
	CGCTGGTGA CATCGTCAGG TCCCTGAAGA AGTCTGGTGA CATCTGGCTG GACGCCTACC	1680
55	TCCATCAGTG AAGGCAACAC CCAGGCGGGC AGAGAAGGGC TCAGGGCACC AGCAACCAAG	1740
	CCAGCCCCCG GCGGGATCGA TACCCCCAMC CCTCCACTGG CCAGCCTGGG GGTGCCCTGC	1800
	CTGCCCTCCT GGTACTGPTG TCTTCCCTC GGGCCCCCA CATGTGTATT CAGCAGCCCT	1860
60	ATGGCCTTGG CTCTGGGCCT GATGGGACAG GGGTAGAGGG AAGGTGAGCA TAGCACATTT	1920

5 TCCCGTCACC TGTGTGAGCT GCTGGCACAG AGTTCTGAGC CCTGGACTCT GCCCCGGGG 420
ATGTGGCCGG CACTGGGCAG CCCCTTGGAC TGAGGCAGTT TTGGTGGATG GGGGACCTCC 480
ACTGGTGACA GAGAAGACAC CAGGGTTTGG GGGATGCCTG GGACTTTCCT CCGGCCTTTT 540
GTATTTTAT TTTTGTTCAT CTGCTGCTGT TTACATTCTG GGGGGTTAGG GGGAGTCCCC 600
10 CTCCCTCCCT TTCCCCCCA AGCACAGAGG GGAGAGGGGC CAGGGAAGTG GATGTCTCCT 660
CCCTCCAC CCCACCCTGT TGTAGCCCTT CCTACCCCTT CCCATCCAG GGGCTGTGTA 720
15 TTATGTGAG CGAATAACA GAGAGACGN TAAAAAAA AAAAAAAT TGAGG 776

20 (2) INFORMATION FOR SEQ ID NO: 118:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 453 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
25 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

30 GGTTCTGACA CCAGATGTTT TCTGCTCCTG GTTAATGTCA GTGAGGGCTG GAAGTTGAAT 60
AAATGAGAAC AGGAGTGGTC TGGGCCCATG TAAATGATCC TCCCTTGAAA GGAGGAACAG 120
CTTTCATCAT TTGTTCCAGC TAAGCCTTGC ATGCATTATA GATCTGGTGC TAAGCAGTGG 180
35 GAAAGATCTC ATAAGTAATG TTTTATGTTT TTTCKGTCTC TCYTCTTCKG TTGTTCTTGG 240
CTTGTTGGTT GTGTTTGKGG TTGTTAACTG GAAAATTGCT ATAAGCCAGT TGTCYCKAAK 300
TTTWAAAAAC GAATTAGAAA AACCATAAAA TCYTCTGGCC YATGCACATK GTCCCYGTTT 360
40 TGTGAAAACA TTAAAGGGTA AATAAAAAGG AAGGAGAACA GTCAATAATG TGCATCAAAT 420
ATATTCTGAG TTCTAGAGAA ATTAATGACC AAG 453
45

(2) INFORMATION FOR SEQ ID NO: 119:

50 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 2016 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
55 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

AGGCTGTTCA CAGGCACCCC GAGACAGCGT CCCCCCTCTG GGCGCACTGG ATTTGACGTT 60
60 GCAGGACGCG CGGCTGGAAC CCCAGGCC CGCTGCTCAC AGACCGGGAC TCCGCTCCG 120

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 790 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

10 GTGGGGAGGG GCGGGAGCAA AGCCGCGCCT CTGGGTGGGC GGGTCGGGCC GTCCAGGTCC 60
 CTGACTTGAA CCTTCCCGGT CCCAGCCCT CAACAGGAGG CGCAGAAAAT CTTCAAAGCC 120
 AACCACCCCA TGGACGCAGA AGTTACTAAG GCCAAGCTTC TGGGGTTTGG CTCTGCTCTC 180
 15 CTGACAATG TGGACCCCAA CCCTGAGAAC TTCGTGGGG CGGGATCAT CCAGACTAAA 240
 GCCCTGCAGG TGGGCTGTCT GCTTCGGCTG GAGCCCAATG CCCAGGCCCA GATGTACCG 300
 CTGACCCCTGC GCACCAGCAA GGAGCCCGTC TCCCGTCACC TGTGTGAGCT GCTGGCACAN 360
 20 AGTTCTGAGC CCTGGACTCT GCCCCGGGG ATGTGGCCGG CACTGGGCAG CCCCTTGGAC 420
 TGAGGCAGTT TTGGTGGATG GGGGACCTCC ACTGGTGACA GAGAAGACAC CAGGGTTTGG 480
 25 GGGATGCCTG GGAATTTCCT CCGGCCTTTT GTATTTTAT TTTGTTCAT CTGCTGCTGT 540
 TTACATTCTG GGGGGTTAGG GGGAGTCCCC CTCCTCCCT TTCCCCCA AGCACAGAGG 600
 GGAGAGGGGC CAGGGAAGTG GATGTCTCCT CCCCTCCAC CCCACCTGT TGTAGCCCT 660
 30 CCTACCCCT CCCATCCAG GGGCTGTGTA TTATGTGAG CGAATAACA GAGAGACGTT 720
 AACAGCCCA TGTCTGTGTC CATCACCCAN TGNTAGGTAG TCAAAGAAGT GGGGTGAGGG 780
 35 CATGCAGAGT 790

40 (2) INFORMATION FOR SEQ ID NO: 117:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 776 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

45

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

50 CAGCGCTGGA AGCAGCTGAG CCGTGTAGGG GTGGGGAGGG GCGGGAGCAA AGCCGCGCCT 60
 CTGGGTGGGC GGGTCGGGCC GTCCAGGTCC CTGACTTGAA CCTTCCCGGT CCCAGCCCT 120
 CAACAGGAGG CGCAGAAAAT CTTCAAAGCC AACCACCCCA TGGACGCAGA AGTTACTAAG 180
 55 GCCAAGCTTC TGGGGTTTGG CTCTGCTCTC CTGACAATG TGGACCCCAA CCCTGAGAAC 240
 TTCGTGGGG CGGGATCAT CCAGACTAAA GCCCTGCAGG TGGGCTGTCT GCTTCGGCTG 300
 60 GAGCCCAATG CCCAGGCCCA GATGTACCG CTGACCCCTGC GCACCAGCAA GGAGCCCGTC 360

260

AAAGCCCACC CGAATCTTGT AGAAATATTC AACTAATAA AATCATGAAT ATTTTATGA 1320
 AGTTTAAAAA TAGCTCACTT TAAAGCTAGT TTTGAATAGG TGCAACTGTG ACTTGGGTCT 1380
 5 GGTGGTGTGT TGTTGTGTGT TTTGAGTCAG CTGATTTTCA CTCCCACTG AGGTTGTCAT 1440
 AACATGCAAA TTGCTTCAAT TTTCTCTGTG GCCCAAACCT GTGGGTCACA AACCTGTTG 1500
 10 AGATAAAGCT GGCTGTTATC TCAACATCTT CATCAGCTCC AGACTGAGAC TCAGTGTCTA 1560
 AGTCTTACAA CAATTTCATCA TTTTATACCT TCAATGGGAA CTTAAACTGT TACATGTATC 1620
 ACATTCCAGC TACAATACTT CCATTTATTA GAAGCACATT AACCATTCTT ATAGCATGAT 1680
 15 TTCTTCAAGT AAAAGGCAAA AGATATAAAT TTTATAATTG ACTTGAGTAC TTTAAGCCTT 1740
 GTTTAAAACA TTTCTTACTT AACTTTTGCA AATTAAACCC ATTGTAGCTT ACCTGTAATA 1800
 TACATAGTAG TTTACCTTTA AAAGTGTAA AAATATTGCT TTAACCAACA CTGTAAATAT 1860
 20 TTCAGATAAA CATTATATTC TTGTATATAA ACTTTACATC CTGTTTTACC TAAAAAATAA 1920
 AAAAAAATAA AAAAAACTCG AGGGGGGCC GGTACCCAAT 1960

25

(2) INFORMATION FOR SEQ ID NO: 115:

30

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 536 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

GTGCTCAGCC CCCGGGCAC AGYAGGACGT TTGGGGCCT TCTTTCAGCA GGGGACAGCC 60
 40 CGATTGGGGA CAATGGCGTC TCTTGGCCAC ATCTTGGTPT TCTGTGTGGG TCTCCTCACC 120
 ATGGCCAAGG CAGAAAGTCC AAAGGAACAC GACCCGTTCA CTTACGACTA CCAGTCCCTG 180
 CAGATCGGAG GCCTCGTCAT CGCCGGGATC CTCTTCATCC TGGGCATCCT CATCGTGCTG 240
 45 AGCAGAAGAT GCCCGTGCAA GTTCAACCAG CAGCAGAGGA CTGGGGAACC CGATGAAGAG 300
 GAGGGAACCT TCCGCAGCTC CATCCGCCGT CTGTCCAMCC GCANGCGGTA GAAACACCTG 360
 50 GAGCGATGGA ATCCGGCCAG GACTCCCTTG GCACCTGACA TCTCCACGC TCCACCTGCG 420
 CGCCACCGC CCCCTCCGCC GCCCTTCCC CAGCCCTGCC CCCGCAGACT CCCCTGCCG 480
 CCAAGACTTC CAATAAAGC TCGTTCCTC TCGAMAAAAA AAAAAATAAA AAAACT 536
 55

60

(2) INFORMATION FOR SEQ ID NO: 116:

AGGGAGATGA CGGACTAGAA GACTGTAAAT AAGATACCAA AGGCACTATT TTAGCTATGT 1800
 TTTTCCCATC AGAATTATGC AATAAAATAT ATTAATTTGT CA 1842
 5

(2) INFORMATION FOR SEQ ID NO: 114:
 10

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1960 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 15 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

GAATTCGGCA CGAGCTTCTC CGCGCCCCAG CCGCCGGCTG CCAGCTTTTC GGGGCCCCGA 60
 20 GTGCGACCCA GCGAAGAGAG CGGGCCCCGG ACAAGCTCGA ACTCCGGCCG CCTCGCCCTT 120
 CCCC GGCTCC GCTCCCTCTG CCCCCTCGGG GTGCGCGGCC CACGATGCTG CAGGGCCCTG 180
 25 GCTCGCTGCT GCTGCTCTTC CTCGCTCGC ACTGCTGCCT GGGCTCGGCG CGCGGGCTCT 240
 TCCTCTTTGG CCAGCCCGAC TTCTCCTACA AGCGCAGMAA TTGCAAGCCC ATCCCGGTCA 300
 ACCTGCAGCT GTGCCACGGC ATCGAATACC AGAACATGCG GCTGCCCAAC CTGCTGGGCC 360
 30 ACGAGACCAT GAAGGAGGTG CTGGAGCAGG CCGGCGCTTG GATCCCGCTG GTCATGAAGC 420
 AGTGCCACCC GGACACCAAG AAGTTCCTGT GCTCGCTCTT CGCCCCCGTC TGCCTCGATG 480
 35 ACCTAGACGA GACCATCCAG CCATGCCACT CGCTCTGCGT GCAGGTGAAG GACCGCTGCG 540
 CCCC GGTCAT GTCCGCCTTC GGNITCCCCCT GGGCCGACAT GCTTGAGTGC GACCGTTTCC 600
 CCCAGGACAA CGACCTTTGC ATCCCCCTCG CTAGCAGCGA CCACCTCCTG CCAGCCACCG 660
 40 AGGAAGCTCC AAAGGTATGT GAAGCCTGCA AAAATAAAAA TGATGATGAC AACGACATAA 720
 TGGAAACGCT TTGTAAAAAT GATTTTGCAC TGAAAATAAA AGTGAAGGAG ATAACTACA 780
 45 TCAACCGAGA TACCAAAATC ATCCTGGAGA CCAAGAGCAA GACCATTTAC AAGCTGAACG 840
 GTGTGTCCGA AAGGGACCTG AAGAAATCGG TGCTGTGGCT CAAAGACAGC TTGCAGTGCA 900
 CCTGTGAGGA GATGAACGAC ATCAACGCGC CCTATCTGGT CATGGGACAG AAACAGGCTG 960
 50 GGGAGCTGGT GATCACCTCG GTGAAGCGGT GGCAGAAGGG GCAGAGAGAG TTCAAGCGCA 1020
 TCTCCCGCAG CATCCGCAAG CTGCAGTGCT AGTCCCGGCA TCCTGATGGC TCCGACAGGC 1080
 55 CTGCTCCAGA GCACGGCTGA CCATTTCTGC TCCGGGATCT CAGCTCCCGT TCCCCAAGCA 1140
 CACTCCTAGC TGCTCCAGTC TCAGCCTGGG CAGCTTCCCC CTGCCTTTTG CACGTTTGCA 1200
 TCCCCAGCAT TTCCTGAGTT ATAAGGCCAC AGGAGTGGAT AGCTGTTTTTC ACCTAAAGGA 1260
 60

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

5	GGAGCCTCTC TTGCAACTTC TGCCACCGCG GGCCACCGCG GCCGCCTGAT CCCGCAGAGG	60
	AAGTCGCGGC CGTGGAGCGA TGACCCGCGG CGGTCCGGGC GGGCGCCCGG GGCTGCCACA	120
	GCCGCCGCGG CTTCTGCTGC TGCTGCTGCT GCMGCTGTTG TTAGTCACCG CGGAGCCGCG	180
10	GAAACCTGCA GGAGTCTACT ATGCAACTGC ATACTGGATG CCTGCTGAAA AGACAGTACA	240
	AGTCAAAAAT GTAATGGACA AGAATGGGA CGCCTATGGC TTTTACAATA ACTCTGTGAA	300
15	AACCACAGGC TGGGGCATCC TGGAGATCAG AGCTGGCTAT GGCTCTCAA CCCTGAGCAA	360
	TGAGATCATC ATGTTTGTGG CTGGCTTTT GGAGGGTTAC CTCACTGCCC CACACATGAA	420
	TGACCACTAC ACAAACCTCT ACCCAGAGCT GATCAGGAAA CCTTCCATCA TGGATAAAGT	480
20	GCAGGATTTT ATGGAGAAGC AAGATAAGTG GACCCGAAA AATATCAAAG AATACAAGAC	540
	TGATTCAATT TGGAGACATA CAGGCTATGT GATGGCAGAA ATAGATGGCC TCTATGTAGG	600
	AGCAAAGAAG AGGGCTATAT TAGAAGGGAC AAAGCCAATG ACCCTGTTCC AGATTCAATT	660
25	CCTGAATAGT GTTGGAGATC TATTGGATCT GATTCCCTCA CTCTCTCCCA CAAAAACGG	720
	CAGCCTAAAG GTTTTAAAGA GATGGGACAT GGGACATTGC TCCGCTCTTA TCAAGGTTCT	780
30	TCCTGGATTT GAGAACATCC TTTTGTCTCA CTCAAGCTGG TACACGTATG CAGCCATGCT	840
	CAGGATATAT AAACACTGGG ACTTCAACRT CATAGATAAA GATACCAGCA GTAGTCGCCT	900
35	CTCTTTCAGC AGTTACCCAG GGTTTTGGGA GTCTCTGGAT GATTTTACA TTCTTAGCAG	960
	TGGATTGATA TTGCTGCAGA CCACAAACAG TGTGTTTAAT AAAACCTGC TAAAGCAGTA	1020
	ATACCCGAGA CTCTCCTGTC CTGGCAAAGA GTCCGTGTGG CCAATATGAT GGCAGATAGT	1080
40	GGCAAGAGGT GGCAGACAT CTTTCAA AAA TACAACCTG GCACCTATAA CAATCAATAC	1140
	ATGGTTCTGG ACCTGAAGAA AGTAAAGCTG AACCACAGTC TTGACAAAGG CACTCTGTAC	1200
45	ATTGTGGAGC AAATTCCTAC ATATGTAGAA TATTCTGAAC AAAGTATGT TCTACGGAAA	1260
	GGATATTGGC CCTCCTACAA TGTTCTTTTC CATGAAAAA TCTACAACTG GAGTGGCTAT	1320
	CCACTGTTAG TTCAGAAGCT GGGCTTGGAC TACTCTTATG ATTTAGCTCC ACGAGCCAAA	1380
50	ATTTTCCGGC GTGACCAAGG GAAAGTGACT GATACGGCAT CCATGAAATA TATCATGCGA	1440
	TACAACAATT ATAAGAAGGA TCCTTACAGT AGAGGTGACC CCTGTAATAC CATCTGCTGC	1500
55	CGTGAGGACC TGAAGTCAAC TAACCAAGT CCTGGAGGTT GTTATGACAC AAAGGTGGCA	1560
	GATATCTACC TAGCATCTCA GTACACATCC TATGCCATAA GTGGTCCCAC AGTACAAGGT	1620
	GGCCTCCCTG TTTTTCGCTG GGACCGTTTC AACAAACTC TACATCAGGG CATGSCAGAG	1680
60	GTCTACAAC TTAGATTTTAT TACCATGAAA CCAATTTTGA AACTTGATAT AAAATGAAGG	1740

	GTGTCGAGAT GGCTATGAAC CCTGTGTAAA TGAAGGAATG TGTGTTACCT ACCACAATGG	360
	CACAGGATAC TGCAAATGTC CAGAAGGCTT CTGGGGGAA TATTGTCAAC ATCGAGACCC	420
5	CTGTGAGAAG AACCGCTGCC AGAATGGTGG GACTTGTGTG GCCCAGGCCA TGCTGGGGAA	480
	AGCCACGTGC CGATGTGCCT CAGGGTTTAC AGGAGAGGAC TGCCAGTACT CGACATCTCA	540
10	TCCATGCTTT GTGTCTCGAC CTGCGCTGAA TGGCGGCACA TGCCATATGC TCAGCCGGGA	600
	TACCTATGAG TGCACCTGTC AAGTCGGGTT TACAGGTAAG GAGTGCCAAT GGACCGATGC	660
	CTGCCTGTCT CATCCCTGTG CAAATGGAAG TACCTGTACC ACTGTGGCCA ACCAGTTCTC	720
15	CTGCAAATGC CTCACAGGCT TCACAGGGCA GAAGTGTGAG ACTGATGTCA ATGACTGTGA	780
	CATTCCAGGA CACTGCCAGC ATGGTGGCAC CTGCGTCAAC CTGCCTGGTT CCTACCACTG	840
20	CCAGTGCCCTT CAGGGCTTCA CAGGCCAGTA CTGTGACAGC CTGTATGTGC CCTGTGCACC	900
	CTCGCCTTGT GTCAATGGAG GCANCTGTG GCAGACTGGT GACTTCACTT TTGAGTGCAA	960
	CTGCCTTCCA GAAACAGTGA GAAGAGGAAC AGAGCTCTGG GAAAGAGACA GGAAGTCTG	1020
25	GAATGGA AAA GAACACGATG AGAATTAGAC ACTGGAAAAT ATGTATGTGT GGTAAATAAA	1080
	GTGCTTTAAA CTGAATTGAC ATTAACAGTR GGTGATCAAC TTTMCTATGT GCTTGTGCTT	1140
30	TTGCTTTTGA TGGAGTAATT CATTTGTTTC TTATCCACCT AAATGCACCC AGCTGCCCTT	1200
	GATTTTCTCT GGGCTACTGG CCTTCACAAC CCTCTCCCAT GTACCCCTCTC TGACTTTGGG	1260
	GTAACCCCTC CCTAACTTAA AGCTAGAGAA TTCTGAAACT GAGGAGGGGA TCCTCTGTTA	1320
35	ATCAGTGAGC ACTTTTGTAT GAGCTGATAG ATGATATATG AGAGACTATG CGTGGCACAA	1380
	TACTTTGTTA CACTCTTAC TGATACAAGT GTTCTAGAGT GYACACACAA CCCAAAGATA	1440
40	GAAATAAAAA GAGGAGCAGT GTCGGGGAGC TTGGGGCCTG GTGTTCCATG GAGAGGGAGA	1500
	AAGGAACAAG CTGRC CAAT TCATTCAACT CCTTATAAAA ATGATGAGGA GGCTGAAAAC	1560
	CAAGAATTTT GATTGGGAAC AGAATACAAG CAGCTGAAC AGATGAWTTA CTAAGCAACA	1620
45	AAGATCCTGT TTTTATACAA ATATCCTTAG TACAAAAACA AAARAAGGAA AACTGTAGGG	1680
	GGGAGTAATG TGCTAAGTAA GCAGAATTGC CTCCAAAAGA AGTTGTTTCT AGTTACTCTT	1740
50	TTCCGGGTNG GGATCTT TAG NTTCCGGTAT TGTGGGTATG GTTCC	1785

(2) INFORMATION FOR SEQ ID NO: 113:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1842 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

CTGGGTGGA GGCCTCAGGG ATGGCAGAAG GCTGGGCCGA GTCTCGGAAG CAGTARACGT 960
 TGAAGCGGCT GTGCTTATTG GGAAGCCAG TCTGGTTGGG GAAGANGAAG AGAGTCTTGA 1020
 5 CACCAGGCAA GCCCCACCA CAGCGCTGGC TGGGTGTGAC GATGGGGTAG CGCACAMTGC 1080
 CATCAGCTAG CCACCTGGGC TGCAGTGGTC CAGGCCACCA TCCCAGGCTG CATAAGTTG 1140
 10 GCCCGTGGTG GCAATCTCTG CACCCCGCTC CTGGCAGTAC GCCCGTGCTT CCTCCAATGT 1200
 CAGCTTCTCT GGAGGGTCAC CCAGGAACAG TTCTCCATTT AGGTCTTCAG CATAACAGTA 1260
 CACATCATAG AGGTCATCCG GGTCCACCAC ACCATAGTTC CGGACCCCGG GGAAGCCATC 1320
 15 CATGTCTCCG TAACAGGCCT CTCGTGGGGT CTGGATGGGA TACCTTTGAC CTTGAMCTCC 1380
 ACAGCGTCGC TGCTGTCATC GATGCCGTGC TGGACCTCAC AGCGATAGAT ACCTGAGTCG 1440
 20 TTGGGGCGCA GCTCGCTCAG CGCCAGGGGA GACGTCGGTG AGCGACGCTG GGTACGCAGG 1500
 CAGTGCCACG CGGAACCGGT AGGCCTCGTT CACCTTGACG CGCACTCCCC GCGCCACCAG 1560
 CACYTCTGCC TCCCGGCCCC GGGACAGGAA AGTCCACTTG ACCCGCGGAG AGCCCAGCAC 1620
 25 AGCCCGGCGG CTCGGCGGTG SCCGAGGTA GTGGACGTGG CAAGGGATGK TGAGGGCSCC 1680
 GCCGAGCAAC GCCYTGCAGT GCGCGCTCGC CCGCGATGCG CACGCGAAAA GCGCGKTCCT 1740
 CTGAGCTGTC TCCTTCCAGA ACATCTGCTA AAGCTGCAGG AGCCTGGGCC AGGACCAGGG 1800
 30 CTGCCAGCAG GGGCAGGAAC AGCTGGGCCA TGCTGCAGGC TACCCAGGGC TGGGGTTGGG 1860
 TCGCGGCACT GCGAAGTTTG TCGCCTCCTC CGGGGGTCTC CTCGGGGTKC ACGGCTCAGT 1920
 35 NCCTGCAGCT GCAGCTGAGA CTGCGGCGGA GACTGCGCGA GC 1962

40 (2) INFORMATION FOR SEQ ID NO: 112:

(i) SEQUENCE CHARACTERISTICS:

- 45 (A) LENGTH: 1785 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

50 AAGTTTCAGC CAAACTTCGG GCGGCTGAGG CGGCGGCCGA GGAGCGGCGG ACTCSGGGCG 60
 CGGGGAGTCG AGGCATTTGC GCCTGGGCTT CGGAGCGTAC CGCAGGGCCT GAGCCTTTGA 120
 AGCAGGAGGA GGGGAGGAGA GAGTGGGGCT CCTCTATCGG GACCCCTCC CCATGTGGAT 180
 55 CTGCCCAGGC GCGGGCGGCG GCGGAGGAGG CGACCGAGAA GATRCCCGCC CTGCGCCCCG 240
 CTCTGCTGTG GCGCTGCTG GCGCTCTGGC TGTGCTGCGC GACCCCGCGC ATGCATTGCA 300

TGCCAGCGGC TCCTCTTTTG AGGAGCTGGA YTTGGAGGGC GAGGGGCCCT TAGGGGAGTC 900
 5 ACGGCTGGAC CCTGGGACTK AGCCCTGGG GACTACCAAG TGGCTCTGGG AGCCCACTGC 960
 CCTGAGAAG GGCAAGGAGT AACCCATGGC CTGCACCTC CCTGCAGTGC AGTTGCTGAG 1020
 GAACTGAGCA GACTCTCCAG CAGACTCTCC AGCCCTCTTC CTCCTTCCTC TGGGGGAGGA 1080
 10 GGGGTTCTTG AGGGACCTGA CTTCCCTGTC TCCAGGCCTC TTGCTAAGCC TTCTCCTCAC 1140
 TGCCCTTTAG GCTCCAGGG CCAGAGGAGC CAGGGACTAT TTTCTGCAAC CAGCCCCCAG 1200
 GGCTGCCNCC CCTGTGTGT CTTTTTTTCA GACTCACAGT GGAGCTTCCA GGACCCAGAA 1260
 15 TAAAGCCAAT GATTTACTTG TTTCAAAAAA AAAAWAAAAA AAAAAAAAAA AAAAAAAAAA 1320

20

(2) INFORMATION FOR SEQ ID NO: 111:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1962 base pairs
 25 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

CGGACCCCTT CCTCCTCCTC NAAGCATGTC CCACCATTTGT GGCAGGGGCT GGGGANACAG 60
 TCACCTGATG CGGGGACCAC GGCCACTCCA CCTCGSTGGC GCTGTCACTG GGCAGCACTG 120
 35 GCTGGGCCTG CACTGAGGTC CCTGCTGGGG CAGTTCTTCC AGAATTATCT TCAGAGGGGG 180
 CCTCCAGCTC CCTGGTACCC TCAGGGGCCC GTGTGGCTGG AAGCAGGGAA GGGGCACCTT 240
 CGGAGCTTCC TGTCTCCTCG CTCTCTCCTC GAGGGACCCC AGATAGCTCA GGACCACCAG 300
 40 TTGCCTCCCC CACCTCTCTT GCCTCAACCA GAGTGAAGG TGATGGGGAT GCTAGGTTC 360
 TCTCCCTGGG AGTGGGCAGA GTCTCAGTAG GTGTCCATG GACCCTTGGA GGCCTGGAAG 420
 45 CTTCTGACTC TCCATCAGGA AGTGGTGATG CACCAGGCTG CAGGACTGCC CTTGCTGGCG 480
 CCTGGGAGAG TGA CTCTCTCC TGGGCTGCTG GCTCAGTGGG GAGAGAGGCC TCAGGGCCCC 540
 GGCTGCTGAG CTCGCTGGGC CATGCCACCA GAGCCTCATC CTCACCTCC TCCTCTTCTT 600
 50 CTCTCTCTCT TTTCTCTTCT TCATCTTCAT ATTCTCTTTC TTCTCTCAAT GCCTTACCTT 660
 CCTCTTCTGR AAACCCCGTG GGCCTACCA TGGATTGTGT TTCAAATTCT AGGAGCGTCC 720
 55 TAGGGGCCTC TGCTGGGTCT TCTGGAGTGG AGCTTCCACC TCCTCCGTCC TCCATGATGG 780
 GGATGGAGTA RATGGCCCCA CGGGATTAC TCTCTGTGGC TTCTTGAGGC AGCTGCAGTT 840
 60 CCTCCAGGGT CTCTGTCACT GTGACRATAG CCTCTAGTCC ATCAAAAGCT GGGTTGGAGG 900

AGCTGGCTGA AAGGGCAAAA TGCAGGTGTT TTCTCAGTAT CACAGACCAG CTCTGCAGCA 1500
 GGGGATTGGG GAGCCCAGGA GGCAGCCTTC CCTTTTGCCT TAAGTCACCC ATCTTCCAGT 1560
 5 AAGCAGTTTA TTCTGAGCCC CGGGGGTAGA CAGTCCTCAG TGAGGGGTTT TGGGGAGTTT 1620
 GGGGTCAAGA GAGCATAGGT AGGTTCACCA GTTACTCTTC CCACAAGTTC CCTTAAGTCT 1680
 TGCCCTAGCT GTGCTCTGCC ACCTTCCAGA CTCACTCCCC TCTGCAAATA CCTGCATTTT 1740
 10 TTACCCTGGT GAGAAAAGCA CAAGCGGTGT AGGCTCCAAT GCTGCTTTCC CAGGAGGGTG 1800
 AAGATGGTGC TGTGCTGAGG AAAGGGGATG CAGAGCCCTG CCCAGCACCA CCACCTCCTA 1860
 15 TGCTCCTGGA TCCCTAGGCT CTGTTCCATG AGCCTGTTGC AGGTTTTGGT ACTTTAGAAA 1920
 TGTAACTTTT TGCTCTTATA ATTTTATTTT ATTAAATTAA ATTACTGCAA AAAAAAAAAA 1980
 AAAAAAATCG GGGGGGGGCC CGN 2003
 20

25 (2) INFORMATION FOR SEQ ID NO: 110:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1320 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

GCTGAGCTGC CTTGAGGTGC AGTGTGGGG ATCCAGAGCC ATGTCGGACC TGCTACTACT 60
 35 GGGCCTGATT GGGGGCCTGA CTCTCTTACT GCTGCTGACG CTGCTGGCCT TTGCCGGGTA 120
 CTCAGGGCTA CTGGCTGGGG TGGAAGTGAG TGCTGGGTCA CCCCCATCC GCAACGTCAC 180
 40 TGTGGCCTAC AAGTTCCACA TGGGGCTCTA TGGTGAGACT GGGCGGCTTT TCACTGAGAG 240
 CTGCAGCATC TCTCCAAGC TCCGCTCCAT CGCTGTCTAC TATGACAACC CCCACATGGT 300
 GCCCCCTGAT AAGTGCCGAT GTGCCGTGGG CAGCATCCTG AGTGAAGGTG AGGAATCGCC 360
 45 CTCCCCTGAG CTCATCGACC TCTACCAGAA ATTTGGCTTC AAGGTGTTCT CCTTCCCGGC 420
 ACCCAGCCAT GTGGTGACAG CCACCTTCCC CTACACCACC ATTCTGTCCA TCTGGCTGGC 480
 50 TACCCGCCGT GTCCATCCTG CCTTGGACAC CTACATCAAG GAGCGGAAGC TGTGTGCCTA 540
 TCCTCGGCTG GAGATCTACC AGGAAGACCA GATCCATTTC ATGTGCCAC TGGCAGGCA 600
 GGGAGACTTC TATGTGCCTG AGATGAAGGA GACAGAGTGG AAATGGCGGG GGCTTGTGGA 660
 55 GGCCATTGAC ACCCAGGTGG ATGGCACAGG AGCTGACACA ATGAGTGACA CGAGTTCTGT 720
 AAGCTTGGAA GTGAGCCCTG GCAGCCGGGA GACTTCAGCT GCCACACTGT CACCTGGGGC 780
 60 GAGCAGCCGT GGCTGGGATG ACGGTGACAC CCGCAGCGAG CACAGCTACA GCGAGTCAGG 840

(2) INFORMATION FOR SEQ ID NO: 109:

5

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2003 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

10

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

	CGCAGGGGGC GCGCGGCCCG GGGACTCGCA TTCCCCGTT CCCCCTCCAC CCCACGCGGC	60
15	CTGGACCATG GACCCAGAT GGTGGGCAST GGTGGTGCTG GCTGCGTTCC CCTCCCTAGG	120
	GGCAGGTGGG GAGACTCCCG AAGCCCCCTCC GGAGTCATGG ACCCAGCTAT GGTTCCTCCG	180
	ATTTGTGGTG AATGCTGCTG GCTATGCCAG NTTTATGGTA CCTGGCTACC TCCTGGTGCA	240
20	GTACTTCAGG CGGAAGAACT ACCTGGAGAC CGGTAGGGGC CTCTGCTTTC CCCTGGTGAA	300
	AGCTTGTTGT TTTGGCAATG AGCCCAAGGC CTCTGATGAG GTTCCCCCTGG CGCCCCGAAC	360
25	AGAGGCGGCA GAGACCACCC CGATGTGGCA GGCCCTGAAG CTGCTCTTCT GTGCCACAGG	420
	GCTCCAGGTG TCTTATCTGA CTTGGGGTGT GCTGCAGGAA AGAGTGATGA CCCGCAGCTA	480
	TGGGGCCACA GCCACATCAC CGGGTGAGCG CTTTACGGAC TCGCAGTTCC TGGTGCTAAT	540
30	GAACCGAGTG CTGGCACTGA TTGTGGCTGG CCTCTCCTGT GTTCTCTGCA AGCAGCCCCG	600
	GCATGGGGCA CCCATGTACC GGTACTCCTT TGCCAGCCTG TCCAATGTGC TTAGCAGCTG	660
35	GTGCCAATAC GAAGCTCTTA AGTTCGTCAG CTTCCCCACC CAGGTGCTGG CCAAGGCCTC	720
	TAAGGTGATC CCTGTATGTC TGATGGGAAA GCTTGTGTCT CGGCGCANTA ACGAACACTG	780
	GGAGTACCTG ACAGCCACCC TCATCTCCAT TGGGGTCAGC ATGTTTCTGC TATCCAGCGG	840
40	ACCAGAGCCC CGCAGCTCCC CAGCCACCAC ACTCTCAGGC CTCATCTTAC TGGCAGGTTA	900
	TATTGCTTTT GACAGCTTCA CCTCAAAGTG GCAGGATGCC TGTTTGCCTA TAAGATGTCA	960
45	TCGGTGCAAG TGATGTTTGG GGTCAATTTT TTCTCCTGCC TCTTCACAGT GGGSTCACTG	1020
	CTAGNAACAG GGGGGMCTTA CTGGAGGGAA CCCGCTTCAT GGGGCGACAC AGTGAGTTTG	1080
	CTGCCCATGC CCTGCTACTC TCCATCTGCT CCGCATGTGG CCAGCTCTTC ATCTTTTACA	1140
50	CCATTGGGCA GTTTGGGGCT GCCGTCTTCA CCATCATCAT GACCTCCGC CAGGCCTTTG	1200
	CCATCCTTCT TTCCTGCCTT CTCTATGGCC AACTGTGCAC TGTGGTGGGA GGGCTGGGGG	1260
55	TGGCTGTGGT CTTTGTGCTC CTCCTGCTCA GAGTCTACGC GCGGGGCCGT CTAAAGCAAC	1320
	GGGGAAGAA GGCTGTGCCT GTTGAGTCTC CTGTGCAGAA GGTTTGAGGG TGGAAAGGGC	1380
60	CTGAGGGGTG AAGTGAAATA GGACCTCCC ACCATCCCCT TCTGCTGTAA CCTCTGAGGG	1440

	CGGGTCCCAA GCCTGTGCCT GAGCCTGAGC CTGAGCCTGA GCCCGAGCCG GGAGCCGGTC	60
	GCGGGGGCTC CGGGCTGTGG GACCGCTGGG CCCCCAGCGA TGGCGACCCT GTGGGGAGGC	120
5	CTTCTTCGGC TTGGCTCCTT GCTCAGCCTG TCGTGCCTGG CGCTTTCCGT GCTGCTGCTG	180
	GCGCATGTNC AGACCCCGCC AAGAATTTTCG AGGATGTCAG ATGTAAATGT ATCTGCCCTC	240
10	CCTATAAAGA AAATTCTGGG CATATTTATA ATAAGAACAT ATCTCAGAAA GATTGTGATT	300
	GCCTTCATGT TGTGGAGCCC ATGCCTGTGC GGGGGCCTGA TGTAGAAGCA TACTGTCTAC	360
	GCTGTGAATG CAAATATGAA GAAAGAAGCT CTGTCACAAT CAAGGTTACC ATTATAATTT	420
15	ATCTCTCCAT TTTGGGCCTT CTACTTCTGT ACATGGTATA TCTTACTCTG GTTGAGCCCA	480
	TACTGAAGAG GCGCCTCTTT GGACATGCAC AGTTGATACA GAGTGATGAT GATATTGGGG	540
20	ATCACCAGCC TTTTGCAAAT GCACACGATG TGCTAGCCCG CTCCCGCAGT CGAGCCAACG	600
	TGCTGAACAA GGTAGAATAT GCACAGCAGC GCTGGAAGCT TCAAGTCCAA GAGCAGCGAA	660
	AGTCTGTCTT TGACCGGCAT GTTGTCTCA GCTAATTGGG GAATTGAATT CAAGGTGACT	720
25	AGAAAGAAAC AGGCAGACAA CTGGGAAAGA ACTGACTGGG NTTTTGCTGG GTTTCATTTT	780
	AATACCTTGT TGATTTTACC AACTGTTGCT GGAAGATTCA AAAGTGAAG CAAAACTTG	840
30	CTTGATTTTT TTTTCTTGT AACGTAATAA TAGAGACATT TTTAAAAGCA CACAGCTCAA	900
	AGTCAGCCAA TAAGTCTTTT CCTATTTGTG ACTTTTACTA ATAAAAATAA ATCTGCCTGT	960
	AAATTATCTT GAAGTCCTTT ACCTGGAACA AGCACTCTCT TTTTACCAC ATAGTTTTAA	1020
35	CTTGACTTTC AAGATAATTT TCAGGGTTTT TGTGTGTGT GTTTTTTGT TGTGTGTGT	1080
	GGTGGGAGAG GGGAGGGATG CCTGGGAAGT GGTAAACAAC TTTTTTCAAG TCACTTTACT	1140
40	AAACAAACTT TTGTAAATAG ACCTTACCTT CTATTTTCGA GTTTCATTTA TATTTTGCAG	1200
	TGTAGCCAGC CTCATCAAAG AGCTGACTTA CTCATTTGAC TTTTGCCTG ACTGTATTAT	1260
	CTGGGTATCT GCTGTGTCTG CACTTCATGG TAAACGGGAT CTAAAATGCC TGGTGGCTTT	1320
45	TCACAAAAAG CAGATTTTCT TCATGTACTG TGATGTCTGA TGCAATGCAT CCTAGAACAA	1380
	ACTGGCCATT TGCTAGTTTA CTCTAAAGAC TAAACATAGT CTTGGTGTGT GTGGTCTTAC	1440
50	TCATCTTCTA GTACCTTTAA GGACAAATCC TAAGGACTTG GACACTTGCA ATAAAGAAAT	1500
	TTTATTTTAA ACCCAAGCCT CCCTGGATTG ATAATATATA CACATTTGTC AGCATTTCCG	1560
	GTCGTGGTGA GAGGCAGCTG TTTGAGCTCC AATGTGTGCA GCTTTGAACT AGGGCTGGGG	1620
55	TTGTGGGTGC CTCTTCTGAA AGGTCTAACC ATTATTTGAT AACTGGCTTT TTTCTTCTC	1680
	TTTGAATGT AACAAATAAA ATAATTTTGG AAACATCAAA AAAAAAAAAA AAAA	1734
60		

CACAAGTGA TTCTCCTTCA ATTCTCAGC TTCCCCCTCG CCTCCAAACA GGGGACACTT 600
 CGGGAATGCT GAAYTAATGA GAACTGCCAG GGAATCTTCA AACTTTCCAA CGGAAGTGT 660
 5 TTGCTCTTTG ATTTGGTTTA AACCTGAGCT GGTGTGGAG CCTGGGAAAG GTGGAAGAGA 720
 GAGAGGTCTT GAGGGCCCCA GGGGTGCGGG CTGGCGAAGG AAATGGTCAC ACCCCCCGCC 780
 CACCCCAGGC GAGGATCCTG GTGACATGCT CCTCTCCCTG GCTCCGGGGA GAAGGGCTTG 840
 10 GGGTGACCTG AAGGGAACCA TCCTGGTGCC CCACATCCTC TCCTCCGGN ACAGTCACCG 900
 AAAACACAGG TTCCAAAGTC TACCTGGTGC CTGAGAGCCC AGGGCCCTTC CTCCGTTTTA 960
 15 AGGGGAAGC AACATTTGGA GGGGACGGAT GGGCTGGTCA GCTGGTCTCC TTTTCCTACT 1020
 CATACTATAC CTTCTGTAC CTGGGTGGAT GGAGCGGGAG GATGGAGGAG ACGGGACATC 1080
 TTTCACTCA GGCTCCTGGT AGAGAAGACA GGGGATTCTA CTCTGTGCCT CCTGACTATG 1140
 20 TCTGGCTAAG AGATTGCGCT TAAATGCTCC CTGTCCCATG GAGAGGGACC CAGCATAGGA 1200
 AAGCCACATA CTCAGCCTGG ATGGGTGGAG AGGCTGAGGG ACTCACTGGA GGGCACCAAG 1260
 25 CCAGCCCACA GCCAGGGAAG TGGGGAGGGG GGGCGGAAAC CCATGCCTCC CAGCTGAGCA 1320
 CTGGGAATGT CAGCCCAGTA AGTATTGGCC AGTCAGGCGC CTCGTGGTCA GAGCAGAGCC 1380
 ACCAGGTCCC ACTGCCCCGA GCCCTGCACA GCCCTCCCTC CTGCCTGGGT GGGGGAGGCT 1440
 30 GGAGGTCATT GGAGAGGCTG GACTGCTGCC ACCCCGGGTG CTCCCGCTCT GCCATAGCAC 1500
 TGATCAGTGA CAATTTACAG GAATGTAGCA GCGATGGAAT TACCTGGAAC ATTTTGTGT 1560
 35 TTTGTTTTTG TTTTGTTTT TGTGGGGGGG GGCAACTAAA CAAACACAAA GTATTCTGTG 1620
 TCAGGTATTG GGCTGGACAG GGCAGTTGTG TGTGGGGTG GTTTTTTCT CTATTTTTT 1680
 GTTTGTTTCT TGTTTTTTAA TAATGTTTAC AATCTGCCTC AATCACTCTG TCTTTTATAA 1740
 40 AGATTCCACC TCCAGTCTC TCTCTCCCC CTTACTCAGG CCCTTGAGGC TATTAGGAGA 1800
 TGCTGAAGA ACTCAACAAA ATCCCAATCC AAGTCAAACT TTGCACATAT TTATATTTAT 1860
 45 ATTCAGAAAA GAAACATTTT AGTAATTTAT AATAAGAGC ACTATTTTTT AATGAAAAAA 1920
 AAAAAAAAAA AAAAAAAAAA CGACGCTGGT GACCGGAATY CGACGTACG 1969

50

(2) INFORMATION FOR SEQ ID NO: 108:

- 55 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1734 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear

60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

AAAAAAAAAA AAAAAAAAAAC CTCGTGCCGA ATTCGGGCACG AGCAGAAACA TCCAATTCTC 960
 AACTGAAGC TCGCACTCTC GCCTCCAGCA TGAAAGTCTC TGCCGCCCTT CTGTGCCTGC 1020
 5 TGCTCATAGC AGCCACCTTC ATTCCCCAAG GGCTCGCTCA GCCAGATGCA ATCAATGCCC 1080
 CAGTCACCTG CTGYTATAAC TTCACCAATA GGAAGATCTC AGTGCAGAGG CTCGCGAGCT 1140
 10 ATAGAAGAAT CACCAGCAGC AAGTGTCCCA AAGAAGCTGT GATCTTCAAG ACCATTGTGG 1200
 CCAAGGAGAT CTGTGCTGAC CCCAAGCAGA AGTGGGTTC A GATTCCATG GACCACCTGG 1260
 ACAAGCAAAC CCAAACCTCG AAGACTTGAA CACTCACTCC ACAACCCAAG AATCTGCAGC 1320
 15 TAACTTATTT TCCCCTAGCT TTCCCCAGAC ACCCTGTTTT ATTTTATTAT AATGAATTTT 1380
 GTTTGTGAT GTGAAACATT ATGCCTTAAG TAATGTTAAT TCTTATTTAA GTTATTGATG 1440
 20 TTTTAAGTTT ATCTTTCATG GTACTAGTGT TTTTATAGATA CAGAGACTTG GGGAAATTGC 1500
 TTTTCCTCTT GAACCACAGT TCTACCCCTG GGATGTTTTG AGGGTCTTTG CAAGAATCAT 1560
 TAATACAAAG AATTTTTTTT AACATTCCAA TGCATTGCTA AAATATTATT GTGGAAATGA 1620
 25 ATATTTTGTA ACTATTACAC CAAATAAATA TATTTTGTGA CAAAAAAAAA AAAAAAAAAA 1680
 AAAAAAAAAA AAGSGGCCGC TCGAATTAAG CC 1712

30

(2) INFORMATION FOR SEQ ID NO: 107:

- 35 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1969 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 40 (D) TOPOLOGY: linear

40

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

CCCCTCCTTC CCCTYGCCAC CTA CTGAACC CTCCTCCGAG GTGCCCGAGC AGCCGTCTGC 60
 45 CCAGCCACTC CCTGGGAGTC CCCCCAGAAG AGCCTATTAC ATCTACTCCG GGGGCGAGAA 120
 GATCCCCCTG GTGTTGAGCC GGCCCTCTC CTCCAACGTG GCCACTCTTC AGCATCTCTG 180
 TCGGAAGACC GTCAACGCC ACCTGGACTC CTATGAGAAA GTCACCCAGC TGCCGGGGCC 240
 50 CATTGGRAG TTCTTGACC AGTACGATGC CCCGMTTTAA GGGGTAAAGG GCGCAAAGGG 300
 CATGGGTCGG GAGAGGGGAC GCAGGCCCT CTCCTCCGTG GCACATGGCA CAAGCACAAG 360
 55 AAGCCAACCA GGAGAGAGTC CTGTAGCTCT GGGGGGAAAG AGGGCGGACA GGCCCTCCC 420
 TCTGCCCTCT CCTGCAGAA TGTGGCAGGC GGACCTGGAA TGTGTTGGAG GGAAGGGGGA 480
 GTACCACCTG AGTCTCCAGC TTCTCCGAG ACCCAGCTGT CCTGGTGGGA CGATAGCAAC 540
 60